Ministry for the Environment
Manatū Mō Te Taiao

# Proposed National Policy Statement for Freshwater Management

## Section 32 Evaluation

New Zealand Government

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# Preface

This document contains the evaluation for the Minister for the Environment, as required under section 32 of the Resource Management Act 1991 (RMA), of the proposed National Policy Statement for Freshwater Management. A section 32 evaluation considers the appropriateness, alternatives, costs and benefits of a proposed national policy statement, along with its objectives and policies. This evaluation is substantially based on an evaluation carried out by independent consultants, Beca Carter Hollings and Ferner Ltd (Beca), who were commissioned by the Ministry for the Environment.

In addition to this evaluation, an independent board of inquiry is to be appointed to inquire into and report on the proposed National Policy Statement to the Minister for the Environment. This report will be provided to the board of inquiry. The public also have an important contribution to make by providing their feedback into the board of inquiry process, which will help in the further assessment and refinement of the proposed National Policy Statement.

A second section 32 evaluation will be undertaken once the board of inquiry has conducted its investigation (as set out in sections 48 to 51 of the RMA) and provided its report, along with any recommendations, to the Minister on the proposed National Policy Statement.

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# Executive Summary

*Tuatahi ko te wai, tuarua whanau mai te tamaiti, ka puta ko te whenua*[1]

All New Zealanders have a common interest in ensuring the country's freshwater resources are managed wisely in order to provide for future generations and the environmental, cultural, social and economic well-being of New Zealand. Our freshwater resources are some of the best in the world in terms of quality and availability. In recent years regional councils have improved the management of point-source (traced to a particular outlet) discharges of polluted water. In some cases this has resulted in improved water quality. However, there have been fewer improvements in the management of land and the control of diffuse (non-point source) discharges into waterways. As a result, there are alarming trends in the degradation of water quality. A number of councils have made good progress in this area, but overall insufficient progress is being made.

The demand for water is increasing in many parts of the country. If too much water is used it may degrade the quality of freshwater ecosystems and reduce the environmental, social, economic and cultural value of ecosystems. The potential impacts of climate change on our freshwater systems are, as yet, largely unknown, but it is expected that the frequency and intensity of severe weather events may increase. Therefore, increasing our resilience to the impacts of climate change on freshwater systems makes sense.

Within this approach there must be a recognition and understanding of the relationship Māori have with fresh water and the values associated with it. This is a special relationship that reflects both the principles of the Treaty of Waitangi and the close connection tangata whenua have with their taonga through the ties of whakapapa.[2]

The significance of these issues to New Zealanders prompted the Government to establish the Sustainable Water Programme of Action in 2004. This programme seeks three key outcomes in relation to fresh water:

- to improve the quality and efficient use of fresh water by building and enhancing partnerships with local government, industry, Māori, science agencies and providers, and rural and urban communities
- to improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users
- to provide for increasing demands on water resources and encourage efficient water management through increased national direction, working with local government on options to support and enhance local decision-making, and developing best practice.

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1 *Wai Ora: Report of the Sustainable Water Programme of Action Consultation Hui* (Ministry of Agriculture and Forestry and Ministry for the Environment, 2005).

2 For explanations of Māori words used in this document, please see the Glossary.

There are a number of ways in which the outcomes sought by the Government can be achieved. The Resource Management Act 1991 (RMA), and its framework of policy and regulatory tools to manage discharges and land use, is the key instrument. At present the main means of achieving these outcomes is through regional and district plans. In combination these plans regulate discharges to waterways, water flows, land use and land intensification, and seek to manage the demand for water. Most regional councils around the country have plans in place that attempt to achieve the sustainable management of freshwater resources. Evidence suggests, however, that water quality is continuing to decline and there are no easy solutions to resolving conflicts over water use and allocation. It is clear that we are not planning for the future of fresh water as well as we could be.

The development of a National Policy Statement (NPS) for Freshwater Management has been identified as a key way to deliver improved environmental outcomes for fresh water, and to recognise the management of fresh water as matter of national significance. This document provides an assessment of the proposed NPS, which seeks to state objectives and policies on the:

- quality of fresh water in New Zealand's rivers, lakes, wetlands and groundwater systems, including effects on the quality of fresh water arising from land-use intensification and land-use change
- demand for fresh water
- flows and levels of fresh water in rivers, lakes, wetlands and groundwater systems.

The RMA requires an evaluation of any policy or regulatory instrument to assess the extent to which:

- the proposed objectives are the most appropriate to achieve the purpose of the Act
- the proposed policies, methods and rules are the most appropriate for achieving the objectives, having regard to their likely efficiency and effectiveness.

This assessment takes account of the potential costs and benefits associated with introducing the specific provisions of the proposed NPS, over and above the existing planning framework. This evaluation is known as a section 32 evaluation, as the requirements are set out in section 32 of the RMA.

This section 32 evaluation concludes that the proposed NPS is the most appropriate approach to achieving the outcomes sought by the Government in relation to freshwater management. A review of the objectives concludes that each of the nine objectives is the most appropriate way to achieve the purpose of the Act – the sustainable management of natural and physical resources. Each of the policies proposed also provides an efficient and effective means for implementing the objectives.

The NPS provides a platform from which tangata whenua and the Crown (and their agents) can begin discussions on the values and interests that Māori have in fresh water. It provides a vehicle to begin to incorporate tangata whenua in decisions on fresh water, and provides some recognition of Māori values and interests in this important taonga. The NPS is thus consistent with the requirements under sections 6(e), 7(a) and 8 of the RMA.

There are clearly a number of ways to achieve improved management of freshwater resources. Following a detailed section 32 evaluation, it is concluded that an NPS is a critical element of the policy framework. The NPS is needed to provide greater national guidance both to water users and to regional and district councils. The NPS must also aim to 'raise the bar' in terms of the water quality outcomes we expect as a nation, and set a timeframe for achieving those outcomes.

The proposed NPS will be publicly notified by a board of inquiry, and submissions called for. The Board will hear submitters and report to the Minister for the Environment on the proposed NPS. Further modification to the proposed NPS is possible before a final NPS is issued. Importantly, the inquiry process will help to inform the board as to whether the proposed NPS adequately articulates and protects the freshwater values that are important to New Zealanders.

# 1 Introduction

*Ko te wai te ora nga mea katoa*
*(Water is the life giver of all things)*[3]

## 1.1 Overview of New Zealand's freshwater resources

All New Zealanders have a common interest in ensuring that the country's freshwater resources are managed wisely, in order to provide for future generations and the environmental, cultural, social and economic well-being of New Zealand. Our freshwater resources are some of the best in the world in terms of quality and availability.

New Zealand is fortunate in that overall it has an abundance of high-quality fresh water. Despite this, many regions in New Zealand have significant freshwater management issues regarding the quality, quantity and allocation of their freshwater resources. These issues are largely a result of human activity such as land-use practices and water abstraction and use. Māori believe there has been degradation in the mauri of the water through the reduction of the relevance and importance of the kaitiakitanga ethos.

Although the seriousness of many of these issues has not yet reached the level of other countries, New Zealand's freshwater resources are likely to face increasing pressures in the future. For this reason, a proactive approach to freshwater management is vital, given the importance of fresh water to the economic, environmental, social and cultural well-being of New Zealand. Water is essential for many sectors in New Zealand's economy and its communities. It is vital for the agricultural sector – from dairy farming or growing fruit and vegetables to aquaculture. It is vital for the generation of electricity, with hydroelectric schemes on many of our large rivers. It is also vital for our settlements, for drinking-water supplies, and as an input to many industrial processes. The value of fresh water to industrial uses alone was estimated at $34.2 billion per annum in 2004 (White et al, 2004).

Water is central to Māori cultural and personal identity and well-being. Rivers and lakes carry ancestral connections, identity and wairua for whanau, hapū and iwi, as reflected in tribal pepeha and personal mihi. As one example of its significance, Māori communities place importance on mahinga kai areas, which provide physical sustenance but also ensure that through cultural practices associated with food gathering, matauranga Māori is retained and celebrated for future generations.

[3] Ministry of Agriculture and Forestry and Ministry for the Environment, 2005.

The importance of fresh water was recognised as one of four key issues for the country in the 2003 Sustainable Development Programme of Action (Department of the Prime Minister and Cabinet, 2003). Subsequently, a Sustainable Water Programme of Action has been developed (Ministry for the Environment, 2006), which seeks to:

- improve the quality and efficient use of fresh water by building and enhancing partnerships with local government, industry, Māori, science agencies and providers, and rural and urban communities
- improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users
- provide for increasing demands on water resources and encourage efficient water management through increased national direction, working with local government on options to support and enhance local decision-making, and developing best practice.

## 1.2 Statement of the issues

There are two main issues relating to fresh water in New Zealand:

- increasing demands on freshwater resources
- reduced or declining water quality.

Demand for fresh water in New Zealand is increasing for many uses, including domestic drinking-water, industrial and manufacturing processes, agricultural and horticultural irrigation, and electricity generation. In recent years much of this demand has been caused by an increase in intensified agriculture, particularly in Canterbury, Waikato and Southland. The past 50 years have also seen a steady increase in the area of irrigated land. Since the 1960s the area of irrigated land in New Zealand has been increasing by around 55 per cent every decade, and irrigated land use currently uses 77 per cent of all water abstracted nationwide. Of the approximately 500,000 hectares of irrigated land in New Zealand, 350,000 hectares are in the Canterbury region alone (Woods and Howard-Williams, 2004).

Although demand for water is greater on the east coast of the South Island, this issue affects most regions of the country to some degree. This includes urban areas, many of which experience water shortages during the drier parts of the year. Although the demand for water varies considerably between regions throughout the country, the overall abstraction rate per capita is two to three times greater than the OECD average (OECD, 2007). This high rate of abstraction does not necessarily indicate that the level of water being used has reached crisis levels, but it does suggest that careful management of New Zealand's freshwater resources would be prudent. This is particularly true given that economic and population growth in the future will mean pressure on water is almost certain to increase.

The second issue is the poor quality of some of New Zealand's freshwater resources. This is canvassed in greater detail in the 2007 State of Environment report prepared by the Minister for the Environment. It is estimated that 10 to 40 per cent of the country's lowland lakes are eutrophic (OECD, 2007). Eutrophication refers to a state where a water body becomes artificially enriched with nutrients to such a degree that biological growth in the water body increases to a level that significantly alters the natural ecosystem. Particularly notable lakes with significant eutrophication include Taupo and Ellesmere (Waihora).

Water quality in rivers is variable, although very few waterways in predominantly urban catchments meet ANZECC[4] guidelines. Many rivers in rural catchments are also degraded and do not meet the guidelines. In urban areas the main source of contamination is stormwater, whereas in rural catchments it tends to be from diffuse (non-point source) pollution from farming. Since the 1980s point-source discharges of pollution into rivers have decreased, mainly through the increased standards placed on regional discharge permits under the RMA. Over the same period, however, the number of non-point source discharges has greatly increased. Most of this increase can be attributed to the intensification of agricultural land, notably the widespread conversion of low-intensity sheep farms and forestry to dairying. Although some efforts have been made to attempt to address the impacts of intensive farming on water quality, such as the 2003 Dairying and Clean Streams Accord (Fonterra Co-operative Group, 2003), the success of these efforts has been relatively modest.

In addition to the two key issues identified above, there are a number of other associated issues in the way fresh water is managed at a national level, including:

- ensuring Māori participation and effective engagement in the management of fresh water
- uncertainties over the impacts of climate change on freshwater systems
- the need to improve the national and regional strategic planning of water management to provide greater certainty
- the need to provide recognition of the nationally important values of fresh water, so that these values are considered in all decision-making
- recognition that in some regions the setting of environmental bottom lines and allocation limits is costly and contentious, and often raises local political challenges that are difficult to overcome without a national approach or guidance
- the fact that water is over-allocated in some catchments, is not consistently allocated to its highest value use over time, and can be wasted
- frequent tension between investment certainty and planning flexibility
- a lack of effective action in the management of diffuse discharges of contaminants on water quality in some catchments
- the development of water infrastructure failing to keep pace with demand.

The issue of how Māori are being meaningfully engaged in the management of freshwater issues was highlighted in the Wai Ora report, which reflected significant input from iwi and hapū representatives from throughout the country. Seventeen hui were held across both the North and South Islands in February 2005. Through these hui it was communicated that Māori feel strongly that the decisions being made around freshwater management are not based on a partnership with tangata whenua that adequately reflects the Treaty of Waitangi, and in particular Article II.

[4] The Australian and New Zealand Environment Conservation Council (ANZECC) was a Ministerial Council that operated between 1991 and 2001. ANZECC provided a forum for member governments to develop co-ordinated policies about national and international environment and conservation issues.

It is also clear from these hui that Māori believe that the values and importance of their role as kaitiaki of fresh water have been diminished through local and central government decisions, and that this has led to the further degradation of fresh water. From these hui there was a general consensus that iwi and hapū have some form of customary rights or interest in water (Ministry of Agriculture and Forestry and Ministry for the Environment, 2005). Many Māori feel a sense of frustration over the lack of decision-making power currently available to them in managing the freshwater resource.

The final key issue for freshwater management is the impact of climate change on New Zealand's freshwater systems. It is unclear whether there will be any impact at all, and if there is, what that impact will be. The most recent predictions suggest that the west of the country is likely to experience greater rainfall, while the east is likely to experience less than at present (Ministry for the Environment, 2001). In some ways this can be seen as an amplification of current climate conditions. Similarly, severe weather events, such as prolonged drought and storms, may increase in frequency and intensity.

The implications of changes in climatic conditions on freshwater systems are unclear at this stage, but it is certainly feasible that there could be significant implications for infiltration rates, evaporation rates, catchment inputs, erosion rates and flood risk. A further issue is that longer-term changes in climatic conditions may promote the expansion and/or relocation of some primary production activities that are currently not feasible. There is the potential for this to increase demand for fresh water in some areas. Although the precise nature of the impacts of climate change is unclear, there is no doubt that climate change needs to be considered in planning for the future of New Zealand's freshwater resources. With this high level of uncertainty it may, in a number of cases, not be possible to make well-informed decisions on planning for climate change at this stage. It is possible, however, to design systems and decision-making processes that are adaptable and responsive as our understanding of the freshwater impacts of climate change improves over time.

Given these issues, the Government has investigated a range of options to improve freshwater management in New Zealand. This section 32 assessment provides a record of that review.

## 1.3 National policy statements

> *The purpose of national policy statements is to state objectives and policies for matters of national significance that are relevant to achieving the purpose of this Act.* (Section 45[1])
>
> *The purpose of this Act is to promote the sustainable management of natural and physical resources.* (Section 5[1])

With the exception of the New Zealand Coastal Policy Statement, national policy statements are not mandatory, but may be prepared at the discretion of the Minister for the Environment where they consider that policy guidance on a matter of national significance would be beneficial. Only two national policy statements have been issued: the New Zealand Coastal Policy Statement (NZCPS) and the National Policy Statement on Electricity Transmission.

The process for developing a national policy statement (other than the NZCPS) is outlined in sections 45 and 46 of the RMA. Broadly, the initial stages of this process involve:

- the Minister (and Cabinet) determining whether an NPS is desirable
- seeking comments from iwi authorities and appropriate organisations
- preparing a proposed NPS
- establishing the process for the national policy statement to be considered, which can be either:
  - the process set out in sections 47−52 of the Act, which allows for the Minister to establish a board of inquiry with specific terms of reference, public notification, submissions and a hearing process, and finally a recommendation from the board of inquiry to the Minister, or
  - an alternative process to be determined at the discretion of the Minister, but which must give the public time to consider the NPS, make submissions and to be heard; a recommendation will still be made to the Minister.

The Minister has chosen to establish a board of inquiry to consider the proposed NPS.

## 1.4 Section 32 evaluation

The specific purpose of this document is to report the findings of the evaluation required under section 32 of the RMA (known as a section 32 evaluation), which relates to policies and plans prepared under the Act. A section 32 evaluation requires that an evaluation be undertaken that considers the alternatives, costs and benefits of a proposed plan or policy. Specifically, section 32 states that:

> *(3) An evaluation must examine –*
>
> *(a) the extent to which each objective is the most appropriate way to achieve the purpose of this Act; and*
>
> *(b) whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives.*
>
> *(4) For the purposes of the examinations referred to in subsection (3), an evaluation must take into account –*
>
> *(a) the benefits and costs of policies, rules, or other methods; and*
>
> *(b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.*

Taken collectively, section 32 requires the benefits, costs and potential risks of the proposed NPS to be evaluated. In this context the terms 'benefits' and 'costs' include environmental, social, cultural and economic considerations. The section 32 evaluation is a crucial aspect of the development of the NPS, and the process used is outlined in detail in section 4.

## 1.5 Structure of this document

This document is structured to meet the requirements of section 32 of the RMA. The sections of the report are as follows.

- Following this introduction, section 2 outlines the current situation (the status quo). This includes a review of the existing statutory and non-statutory measures for managing freshwater resources, and a review of the current approach. This section identifies five current issues, which lead to the need for national action in the form on an NPS.
- Section 3 identifies a range of alternatives to the NPS, and evaluates their likely effectiveness relative to the three outcomes identified in the Government's Sustainable Water Programme of Action.
- Section 4 provides an overview of the evaluation methodology and the requirements of section 32.
- Section 5 includes a detailed evaluation of the NPS as proposed. This includes an evaluation of each objective, and an estimation of the costs and benefits associated with each policy. Risks and uncertainties are also identified.
- Finally, section 6 provides conclusions to the section 32 assessment.

# 2 The Current Situation

## 2.1 Introduction

This section outlines the current management – or *status quo* – of New Zealand's freshwater resources. The focus is on statutory controls, principally under the RMA, but there are also a number of non-statutory measures in place relating to the management of freshwater resources, and these are also considered. This overview of the current system of management concludes with an evaluation of its effectiveness.

## 2.2 Statutory controls

Freshwater management in New Zealand is primarily carried out under the RMA. There are a number of provisions in the Act that relate to freshwater management, and the institutional arrangements for managing water under the Act are reasonably complex. Management is subject to the general planning provisions of the Act through a hierarchy of documents, from the national to regional to district level. These documents must reflect the purpose and principles of the Act, as outlined in Part II. The purpose of the Act, outlined in section 5, is:

> *(1) ... to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
>
> *a. Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *b. Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *c. Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Some matters of national importance (section 6) are also of relevance:

> *a. The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development.*
>
> *c. The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.*
>
> *d. The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers.*
>
> *e. The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*
>
> *g. The protection of recognised customary activities.*

Other matters (under section 7) that are relevant are:

*a. Kaitiakitanga*

*b. The efficient use and development of natural and physical resources*

*f. Maintenance and enhancement of the quality of the environment*

*g. Any finite characteristics of natural and physical resources*

*h. The protection of the habitat of trout and salmon.*

The principles of the Treaty of Waitangi (section 8) also have implications for freshwater management:

> *In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).*

Sections 9, 13, 14 and 15 are also crucial in terms of the duties and restrictions people have in relation to both the use of land, and the use of rivers and lakes, water and discharges to water. In addition, schedule 3 of the RMA provides for the use of water quality classes that can be adopted by councils.

In the absence of any national policy on fresh water, regional-level documents have provided the main framework for the management of fresh water. The main planning instruments have been mandatory regional policy statements and optional regional plans. District plans, prepared by territorial authorities, are predominantly concerned with land-use planning, which indirectly influences fresh water in many cases. As such, district plans are required to 'give effect to' regional policy statements (section 73(4)). Note that this requirement was introduced in an RMA amendment in 2005, before which district plans were to be 'not inconsistent with' regional policy statements, which was considered a more flexible less demanding requirement. In practice, the connections between freshwater management and land-use planning have been variable.

### 2.2.1 Regional policy statements and regional plans

Regional councils are the main local authority charged with managing freshwater resources, and their boundaries are largely based on hydrological catchments. Regional policy statements are mandatory under section 60 of the RMA and are aimed at achieving the integrated management of the natural and physical resources of the region. They are required to state the resource management issues for the region and the objectives, policies and methods for addressing those issues.

In addition to regional policy statements, regional councils may also choose to prepare regional plans to address resource management issues. All but two of the 16 regional councils (unitary authorities included) have prepared regional plans on water management, and it is through these plans that rules relating to the abstraction and use of fresh water and discharges to water bodies are given statutory effect. Although most regions do have plans in place for water management, the focus and content of these plans are variable (Hill Young Cooper, 2005).

Activities that involve the abstraction of water or the discharge of contaminants to water require a resource consent, unless a rule in a regional plan expressly permits such activities. Such discharges and abstractions are subject to the provisions of the regional policy statement and regional plans (if in place). The abstraction of water for domestic and stock drinking is expressly permitted under section 14 of the Act, and there are a number of provisions in the Act specifically in relation to water. Under section 68(7) regional councils are able to set minimum or maximum flow levels and establish minimum standards for water quality. Section 136 allows for the transfer of water permits for the take and use of water. Although this provision has not been widely used, it does allow water permits to be transferred between users as a tradable commodity.

Finally, amendments to the Act in 2005 have created additional procedures (sections 124A to 124C) which allow regional councils to consider natural resource allocation. In relation to water, councils may have regard to "the efficiency of the person's use of the resource" and "the use of industry good practice by the person". These amendments come into effect on 9 August 2008, so it is unclear what impact they will have on freshwater management, but they do potentially offer a wider range of tools to councils.

A review of regional plan provisions relating to freshwater management was undertaken in 2005 (Hill Young Cooper, 2005), and focused on three key areas of management:

- freshwater allocation
- water quality management
- integration of monitoring and management.

In terms of freshwater allocation, the 2005 stocktake found there were a number of different approaches, but that all plans that had been prepared did address this issue. It was noted that:

> *Most plans have one or more catchments with specified minimum flows, some as a result of Water Conservation Orders, and a variety of mechanisms by which allocatable flows or residual stream flows are determined. Most plans also provide for allocations greater than the identified allocatable flow/residual stream flow on a case-by-case basis.* (Hill Young Cooper, 2005)[5]

In general, it was found that most water allocation takes place through the resource consent process, typically on a first-in-first-served basis.

In relation to the management of water quality, most plans were found to identify the important 'values' in each region in relation to water quality. A number of councils use the third schedule to classify water (or intend to do so), including Waikato, Hawke's Bay, Northland, Wellington, Canterbury, Horizons (Manawatu−Wanganui), Tasman, Marlborough, Nelson, West Coast, Otago and Southland.

Perhaps the greatest concern is the conclusion from a review of plans that "the link between contaminant discharges, especially diffuse source discharges, and minimum flow levels in streams is generally not clear in the plans" (Hill Young Cooper, 2005: 9). The report did note that "most of the councils appear to have significant programmes in place in respect of sustainable land management practices".

[5] Ibid.

In terms of taking an integrated approach to management, and the availability of monitoring data, the 2005 review found that most regional councils were undertaking "a wide range of monitoring activities to determine, surface water and groundwater availability, stream health and other aspects of environmental quality, and have ongoing programmes to identify areas of natural and cultural significance" (p.9). This suggests that although programmes vary between regions, there is a reasonable level of base information available to make increasingly informed decisions about freshwater management.

### 2.2.2 District plans

District plans are mandatory under section 73 of the RMA. Their primary focus is the management of land use, although the focus of many plans is on managing the effects of land use (rather than a system of zoning for land-use management *per se*). Although district plans are concerned with land management, they must "not be inconsistent" with regional plans and water conservation orders in place in the district.

However, land-use planning and freshwater management have not often been well integrated. In particular, the cumulative effects of land-use activities on fresh water do not appear to have been considered under the current framework. District plans must give effect to regional policy statements and take account of regional plans. A key concern is whether this link is sufficiently recognised to affect decision-making in relation to land-use change and subdivision. Although land use and subdivision 'control' are clearly within the responsibilities of territorial authorities, section 31 of the RMA does not identify water management as a function of territorial authorities. This may provide some explanation as to why the link between land use, subdivision and water management has been relatively weak. More specifically, the significant challenge of addressing the cumulative impacts on water quality arising from land-use practices is often not well handled.

### 2.2.3 Water conservation orders

Under Part IX of the RMA, water conservation orders (WCOs) can be placed on water bodies to sustain their "outstanding amenity or intrinsic values". The process for obtaining a WCO involves applying to the Minister, and the Minister appointing a special tribunal to hear and report on the application. Further submissions can be made to the Environment Court. There are currently 14 WCOs in place. Under a WCO, controls can be placed on the rates of flow and the taking of water, and standards for water quality can be prescribed. Once a WCO has come into effect, a regional council is bound to manage the water body in such a way as to uphold the standards established by the WCO (Richmond et al, 2004). WCOs cannot deal directly with land-use practices that can have an impact on water quality, and this has implications for the ability of a WCO to be used as a tool to manage freshwater systems. Lake Ellesmere, for instance, has had a WCO in place since 1990, yet during that time the lake ecosystem has deteriorated significantly due to eutrophication caused by diffuse discharges into feeder streams and wetlands.

## 2.3 Non-statutory measures

In addition to the regulatory framework of the RMA, there are a number of programmes and activities carried out by regional and district councils, community organisations, industry groups and non-government organisations (NGOs) that aim to improve freshwater management and/or the interface with land management. A few examples of these are set out below, but there are many more specific examples, many of them regionally based.

### 2.3.1 Dairying and Clean Streams Accord

The Dairying and Clean Streams Accord (the Accord) was developed in partnership between New Zealand's biggest dairying co-operative (Fonterra), the Ministry for the Environment, the Ministry of Agriculture and Forestry and regional councils. The Accord was developed in 2003 to address increasing concerns about the negative environmental impacts of dairying on stream water quality. The Accord sets five performance targets, with associated timeframes. The first target is "Dairy cattle excluded from 50 percent of streams, rivers and lakes by 2007, 90 percent by 2012". Reporting on progress towards the performance targets is completed at regular intervals. The most recent report (2006/07) found that although progress has been made in some areas, overall there are still significant concerns around effluent disposal, nutrient management and resource consent compliance (Fonterra Dairy Co-operative et al, 2008).

### 2.3.2 Kaitiakitanga programmes

Iwi and hapū across New Zealand have been proactive in engaging in a range of activities of protection, monitoring and enhancement. Tangata whenua take their role and responsibilities as kaitiaki seriously. One example is the Ngati Tuwharetoa Wai Ora programme, which monitors both the cultural and ecological health of waterways in its tribal rohe. Another example is the Rotorua Lakes Strategy Group, which is the overarching management group responsible for co-ordinating policy and actions to improve the Rotorua lakes. It is made up of representatives from Te Arawa Lakes Trust, Environment Bay of Plenty and Rotorua District Council. The Group is now established in law, as part of the Te Arawa Lakes Settlement, for co-ordinated management of the Rotorua lakes.

### 2.3.3 Community restoration programmes

Many councils and NGOs have established restoration programmes for streams and lakes, and in some instances for groundwater aquifers. These programmes typically involve the community becoming involved in cleaning up streams or riparian areas, and undertaking projects such as replanting riparian vegetation.

### 2.3.4 Public education programmes

A number of programmes are in place to educate the public on the importance of water quality, avoiding pollution and discharges. These programmes can have a positive impact in terms of the way different people go about their normal activities, especially where the education is targeted at particular user groups (eg, industry, boat users, etc).

### 2.3.5 Water metering

Water metering is a further non-statutory technique used in some parts of the country (most notably, in Auckland). This can encourage greater awareness of the true cost of water, as well as delivering immediate benefits in terms of managing demand for water. However, water metering and pricing are highly contentious unless the community is demanding greater accountability and fairness in water pricing.

## 2.4 Effectiveness of the current approach

The key tools for managing fresh water under the RMA – regional policy statements, regional plans and district plans – have had mixed success at delivering improved environmental results. Statutory controls on freshwater management have been relatively successful at addressing point-source discharges to freshwater bodies. Tighter statutory controls and higher community standards regarding the environment have seen a substantial reduction over the past 20 years in point-source freshwater pollution from industry, municipal sewage and intensive agriculture.

The control of diffuse discharges to fresh water has been much less successful. In particular, heavily urbanised land and land used for intensive agriculture contribute significantly to overall discharges to fresh water. These cumulative effects are difficult to control under the RMA, and currently limited use is made of catchment-wide approaches to freshwater management – although there are some notable exceptions, such as the Lake Taupo and Lake Rotorua catchment management approaches. Voluntary measures such as the Dairying and Clean Streams Accord have met with some success.

Current methods of water allocation operate on a first-in-first-served basis. Traditionally this method has been adequate where water resources have greatly exceeded demand. In some regions where fresh water is becoming limited, notably in the east of the South Island, this approach to allocation may not be sustainable. Also, such an approach does little to promote the efficient use of water or the effective management of cumulative affects.

It is clear that in some cases the current approach to freshwater management is not leading to good environmental outcomes. In particular, degraded water quality in urban and intensive agricultural catchments is not being well addressed. This was confirmed by the recently released state of the environment report, which identified the degradation of New Zealand's freshwater resources as a key concern (Ministry for the Environment, 2007b).

Following are some of the key conclusions of the state of the environment report.

- many larger freshwater systems are fully allocated, although most regions have a good supply of water
- between 1999 and 2006 the demand for fresh water has increased by 50 per cent

- our total water use is two to three times higher than the OECD average
- nitrogen and phosphorus levels are increasing in our most polluted rivers (although they are still about half the OECD average)
- bacterial levels in swimming locations appear to be reducing around the country
- twenty per cent of monitored groundwater aquifers have bacterial levels that make the water unsafe to drink
- shallow aquifers typically have high nitrate and bacterial levels, and are heavily affected by farming and urban development.

Although New Zealand has an abundance of freshwater resources as a whole, our waters are facing increasing degradation pressures, particularly with the diversification of rural land uses that has occurred over the past 20 years.

Given that a number of the indicators for water quality are moving in a negative direction, it is clear that the existing resource management framework is not entirely achieving its goal: the sustainable management of natural and physical resources. National guidance may help to resolve the inability to make the tough decisions at a local level, while also creating a more consistent regulatory environment across the country.

It will be important for Māori to see how the interests of hapū and iwi are balanced against the national interests, as there is a clear view that local issues are important and need to be addressed where possible at a local level. However, in general there is support from tangata whenua for national environmental standards to achieve consistency in some areas (Ministry of Agriculture and Forestry and Ministry for the Environment, 2005).

There are a number of options for providing national policy guidance, and these are addressed in section 3.

## 2.5 Problem statement

The framework for managing a range of resource management issues is now well established, both at the legislative level within the RMA itself, and at regional and district levels with regional policy statements, regional plans and district plans. However, one of the fundamental questions this section 32 assessment seeks to address is whether the existing framework can fully achieve the sustainable management of freshwater resources as a matter of national significance.

As noted in the previous section, strictly focusing on the environmental results being achieved by existing district and regional policies, at a nationwide level the 2007 state of the environment report identifies a range of indicators in relation to freshwater resources that are either not improving or are degrading. Although there are some areas where improvement is noted (eg, bacterial levels at swimming locations), there is a solid argument that stronger national guidance is needed to address this environmental challenge.

The key problems that are identified at a national level, and which support the need to examine a national response to freshwater management, are as follows.

- ***Problem 1:*** *Decline in a wide range of freshwater quality indicators*. As noted above, the state of the environment report provides evidence that there has been a decline in a number of aspects of water quality. Although there are clearly regional variations, and some areas where improvements are noted, overall the picture suggests New Zealand is not managing its precious freshwater resources as well as it should. Although the RMA has undoubtedly improved the management of point-source discharges, there is an ongoing decline in water quality.
- ***Problem 2:*** *Lack of integrated management*. Although the RMA is focused on achieving sustainable management, and focuses on integrated consideration of a range of factors (eg, water management, coastal management, land-use management), the separation of functions between district and regional councils and a lack of focus on the impacts of land uses on freshwater resources have resulted in a lack of truly integrated management. This has resulted in continued degradation of freshwater resources. A much greater focus on the cumulative impacts of land use, land-use change and intensification in both urban and rural environments is required to achieve a more sustainable approach to fresh water – and ultimately to meet the Government's goals for fresh water.
- ***Problem 3:*** *Lack of focus on the uses of freshwater resources*. There is a wide range of, often conflicting, uses for fresh water. In many cases there are winners and losers, because in a number of areas in New Zealand water is over allocated. Inefficient use of water results in poor environmental outcomes. Social, economic and cultural uses of water need national recognition, or there will be a continuing lack of focus on the national significance of freshwater resources.
- ***Problem 4:*** *Freshwater demand management is not presently sustainable*. In part, this problem is related to the previous one, in that water allocation is not considered sustainable in some catchments or regions. Recognising the national importance of water demand management is likely to become increasingly important as tensions relating to water use increase.
- ***Problem 5:*** *Insufficient information and reporting.* Although there is a range of excellent monitoring programmes, particularly at the regional level, it is an increasingly complex area of reporting. If the importance of water resources at a national level is acknowledged, it follows that reporting at a national level will be required to determine whether real results are being achieved. At present, although thorough and detailed, the state of the environment report is perhaps not regular enough to provide information that will enable national-level judgement of whether sufficient gains are being made.

These five key problems need to be addressed within the existing RMA framework. At present it appears that at a national level the sustainable management of freshwater resources is not being achieved through the mix of existing policy and decision-making mechanisms (ie, regional and district plans, and resource consent decision-making). Given that regional and district plans have been in place for some time, there appears to be a case for national intervention.

This is not to suggest that district and regional councils are not able to resolve the issue. Rather, the Government needs to provide strong and clear direction on what is considered to be nationally significant.

The Government has noted the following goals for any national intervention:

- to address existing and future constraints on the availability of freshwater resources
- to address the effects of existing and future discharges of contaminants to freshwater resources
- to provide more certainty in respect of competing demands on New Zealand's freshwater resources and facilitate opportunities to increase benefits from the use of freshwater resources, within the above constraints on availability
- to meet the recreational aspirations of New Zealanders, including that freshwater resources are swimmable
- to address matters of national significance relating to the sustainable management of freshwater resources
- to improve the integrated management of freshwater resources by territorial authorities, regional councils, and others whose activities affect the freshwater resources.

Given that the status quo does not provide national guidance on how to achieve these goals, and that the existing policy framework is not achieving the sustainable management of freshwater resources, the case to consider national guidance is compelling. There are, of course, a range of other alternatives to consider, and these are outlined in the following section.

# 3 The Proposed NPS and Its Alternatives

The main outcomes sought by the Government in relation to fresh water were outlined in the Sustainable Water Programme of Action. They are to:

- improve the quality and efficient use of fresh water by building and enhancing partnerships with local government, industry, Māori, science agencies and providers, and rural and urban communities
- improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users
- provide for increasing demands on water resources and encourage efficient water management through increased national direction, working with local government on options to support and enhance local decision-making and developing best practice.

In the context of the resource management issues identified in the previous section, and the above outcomes, it is clear that the existing framework of regional and district plans is not delivering the required outcomes. In this section a series of options is presented for remedying this situation. These options are evaluated against the three outcomes set out in the Sustainable Water Programme of Action.

## 3.1 Alternatives considered

There are a number of options for improving the outcomes for freshwater management at a national level. One option is clearly the development of a national policy statement, which is the subject of this assessment. However, the process of developing an NPS requires that alternative options for addressing the resource management issues be examined. Six alternatives are considered:

- amendments to the RMA
- enhancement of the status quo (fresh water managed through regional and district planning mechanisms)
- ministerial call-in of major freshwater proposals
- national environmental standards for fresh water
- economic instruments
- best-practice guidance.

Most of the alternatives considered are not mutually exclusive. In particular, a national environmental standard (NES) relating to human drinking-water sources came into effect on 20 June 2008, and an NES for the measurement of water takes was agreed to by Cabinet in February 2008. Consultation is currently underway on a potential NES on Ecological Flows and Standards. Equally, regardless of whether an NPS is developed, some improvement of the current management system (the status quo) would be expected, primarily through ongoing improvement of regional council practice.

## 3.2 Evaluation of the alternatives

### 3.2.1 Amendments to the RMA

Given that an NPS would affect freshwater management across the country, one alternative would be to amend the RMA. This could involve adding specific provisions on fresh water, and greater focus on integrated management in relation to the interface between land use and freshwater management. However, Part II of the Act already expressly requires safeguarding the life-supporting capacity of water as a part of sustainable management, so it is doubtful that further strengthening of freshwater considerations under Part II would facilitate a substantial improvement in freshwater management.

An NPS can be much more specific than Part II of the RMA, which effectively lists (sections 6 and 7) a range of matters to be provided for or considered in resource management processes. Similarly, amendments to the RMA – even beyond possible amendments to Part II – would be unlikely to reflect the objectives and values of New Zealanders in relation to fresh water as definitively as an NPS. Given the significance of freshwater management, it is possible to make the preparation of regional plans for water mandatory, but, as noted previously, most regional councils already have such plans in place.

Amendments could be made to the RMA to address specific freshwater management cases. This occurred in 2004 when the Resource Management (Waitaki Catchment) Amendment Act 2004 was enacted to address water allocation in the Waitaki catchment. This case-by-case approach is unlikely to be effective in the context of national-level freshwater management, however, because it would not clearly articulate national values and objectives in relation to fresh water, and is also unlikely to be effective from either a cost or timeline perspective.

Amendments to sections 30 and 31 could be developed to more closely align the functions of regional and district councils and ensure better policy overlap for land-use and freshwater management. However, while possible, this may not in practice resolve the issue and could create the risk of an overlap of responsibilities.

In reviewing this alternative against the outcomes sought, it is considered that further amendments to the RMA, even if they could be adequately identified, would not build or enhance partnerships with local government, industry, Māori, science agencies and providers, and rural and urban communities. Furthermore, although amendments could be contemplated with the aim of improving the management of the undesirable effects of land use on water quality, this need not occur at the legislative level, but rather could occur through increased national direction and partnerships with communities and resource users.

Finally, RMA amendments would struggle to further improve local management of increasing demands for water resources or encourage efficient water management. Basically, amendments could not provide a detailed policy framework that both recognises the national significance of fresh water and provide for local variations.

### 3.2.2 Enhancement of the status quo

It is difficult to anticipate specific enhancements to the status quo. Broadly, the development of second-generation regional policy statements and regional and district plans is expected to involve improved and updated methods and rules to address freshwater resource issues. The timeframe for these improvements will be variable, however, and there would be no certainty that the management of freshwater resources will meet all the sustainability outcomes sought.

The diversity of current approaches to management across the country is likely to continue in the absence of any clear articulation of national priorities for freshwater management. The status quo cannot provide a national policy framework, or raise the status of fresh water to one of national significance.

One method through which Māori could have more decision-making powers in relation to fresh water is to promote the use of section 33 in the RMA to transfer powers to iwi authorities. This has not currently been successfully utilised, but is a way in which Māori could, for example, become the resource consent authority over a particular section of waterway. The RMA also contains section 36(a), which allows for the establishment of joint management agreements, which enable a joint approach to specific functions and areas.

It is considered, therefore, that although freshwater management will improve through second-generation plans and allow for local flexibility based on the varying needs of different regions and districts, it will not be sufficient to meet the three outcomes specified in the Sustainable Water Programme of Action.

### 3.2.3 Ministerial call-in of major freshwater proposals

Under sections 140−150AA of the RMA, the Minister for the Environment (or Conservation in the coastal marine area) may 'call-in' proposals of national significance, and refer them to a board of inquiry or the Environment Court for determination. Until recently very few proposals have been called in. Legislative amendments to the Act in 2005 changed the call-in provisions to broaden their scope, and a number of proposals, mostly concerned with electricity transmission and generation, have been called-in in recent years.

In relation to fresh water, only one project, known as Project Aqua, has been called-in and this was before the 2005 legislative amendments. In this rather exceptional case, new legislation was passed (the Resource Management [Waitaki Catchment] Amendment Act 2004), which provided for a specific decision-making framework for water allocation in the catchment.

Call-in is limited to proposals that are, or are part of, a matter of national significance. Although call-ins can be useful provisions for specific proposals, they are of limited value in addressing the wider issues associated with freshwater management. Specifically, a call-in would not provide for any direction in terms of how resources should be managed. This is because the majority of issues associated with freshwater management, such as diffuse pollution and water allocation, do not usually relate to any single project. Rather, the environmental outcomes for fresh water are a product of multiple activities in a catchment, and multiple takes from surface and ground waters; essentially, most of the current problems with fresh water are not a result of a single activity or project. Use of call-in can highlight issues and contribute to solutions, but cannot establish a policy framework to address the management of New Zealand's fresh waters.

It is not considered that greater use of, or amendments to, call-in powers will have any significant influence on the first two outcomes specified in the Sustainable Water Programme of Action. Call-ins of freshwater proposals could provide the best process for decision-making in relation to water allocation issues, but this is considered to be only a partial solution and would not provide a context for all such proposals.

### 3.2.4 National environmental standards for fresh water

National environmental standards (NES) are prepared under section 43 of the RMA and may prescribe technical standards, methods or requirements. There are currently two NES relating to fresh water – one for drinking-water sources and one for the measurement of water takes. The NES for sources of human drinking-water was issued in December 2007 and came into effect on 20 June 2008. It requires regional councils to consider the effects of activities on drinking-water sources when making decisions on water and discharge permits, and on permitted activities in regional plans. Although this is a positive addition to the freshwater planning hierarchy, it only applies to water used for drinking-water supply.

Other NES can tackle specific issues, such as establishing minimum flows, water-quality standards or land management practices to minimise the impacts on fresh water. The two instruments – NES and NPS – are expected to be complementary in ensuring effective freshwater management. This is because NES can set national standards and regulate specific activities, whereas NPS establish an overall policy framework for decision- and plan-making, and recognise the national significance of matters.

Areas of particular interest to Māori relate to sewage discharges and establishing minimum flows. It will be essential that Māori have a role in determining NES. The potential development of freshwater NES is seen as an opportunity for Māori values to be included in these guidelines and for Māori to be included in the decision-making process. These standards could also include cultural health indicators, such as measuring the mauri of the waterways.

NES can therefore provide strong guidance in specific areas, and help improve freshwater management at a national level. In particular, NES can help implement outcomes 2 and 3; that is, to improve the management of the undesirable effects of land use on water quality, and to provide guidance on water allocation and encourage more efficient uses of water. However, it is unlikely that NES by themselves can achieve the three outcomes sought.

### 3.2.5 Economic instruments

Economic instruments such as water metering and pricing (for agricultural, horticultural, industrial, commercial and domestic use) and nutrient trading schemes could be developed, and to some extent have evolved under the current regime.

Used in isolation these instruments are not sufficiently holistic to meet the wide-ranging outcomes sought. They can help in specific areas, where pricing of water can lead to more efficient allocation or a reduction in demand, but their implementation will rely on the collection of information and data, consultation and target setting, and the regulatory framework would presumably be needed to provide a common set of rules (or property rights) for them to function effectively. Also, economic instruments will not be appropriate in all circumstances. For example, universal water metering and pricing for domestic water supply may be a less

efficient option than alternative charging mechanisms, when equipment and administration costs are taken into account, depending on water availability and supply augmentation costs.

Māori continue to reaffirm their view that they have interests and rights in water, and that these should not be overridden by the creation of water property rights through economic instruments without these issues first being addressed by the Crown with Māori.

Economic instruments, again, are not likely to achieve any of the three outcomes in their entirety, although they will likely be most useful in outcome 3 – managing water demand. Outcome 2 could also benefit from the application of economic instruments, principally by identifying the real costs of land-use intensification relative to the impacts on water quality and establishing a suitable charging regime to mitigate adverse effects. However, on the whole, it is not considered that greater use of economic instruments will have any significant influence on the three outcomes specified in the Sustainable Water Programme of Action.

### 3.2.6 Best practice guidance

Best practice guidance generally involves presenting case studies that show examples of effective and innovative approaches to resource management issues. Best practice guidance has been developed on a number of issues, including planning for water allocation. It is generally developed by industry leaders in conjunction with the Ministry, and is disseminated through the Quality Planning website.

Further guidance on other aspects of freshwater management could be developed, showcasing examples of good practice by regional and local authorities, and these could include examples of model rules and methods. This approach allows for local flexibility, with local authorities using the aspects of best practice examples that fit their specific circumstances. The disadvantage of a sole reliance on this approach is that it does not carry any statutory weight. Although it is clear that this advocacy-based approach is of limited value by itself, it is likely that some form of best practice guidance will be necessary as part of any mix of potential solutions.

Overall, it is considered that guidance is not an appropriate means of achieving the three outcomes specified in the Sustainable Water Programme of Action.

### 3.2.7 National policy statement

A national policy statement (NPS) has the advantage of being able to specify clear policy in the form of objectives and policies. An NPS can both direct councils to amend plans and policy statements, as well as being a matter that decision-makers on resource consents must consider under section 104. An NPS is potentially a dynamic and responsive instrument, particularly when compared to, say, legislative amendments. An NPS is also relatively easy to prepare, review and alter if necessary. This is important, because a reflexive and adaptive approach to freshwater management is likely to be required, particularly given areas of current uncertainty or emerging knowledge, such as changing climatic conditions.

It is worth noting that under the current legislative framework there is already considerable scope for national-level direction on the management of New Zealand's freshwater resources – notably through the use of an NPS. An NPS can provide direction for policy, as well as programmes. In this sense, an NPS can provide objectives and policies aimed at improving the quality and efficient use of fresh water. It can also promote both non-regulatory and regulatory methods, which may include building and enhancing partnerships with local government, industry, Māori, science agencies and providers, and rural and urban communities. By doing so, an NPS would meet the requirements of outcome 1.

An NPS could also provide clear policy on how to improve the management of the undesirable effects of land use on water quality by tying together policies on water quantity, water quality and land-use development so planning takes place in an integrated and strategic manner. This area is seen as a major opportunity for improved practice, and therefore an NPS is able to satisfy outcome 2.

Finally, an NPS can provide clear guidance on how to deal with increasing demands on water resources and encourage efficient water management. This can be achieved through regulatory means, as well as non-regulatory means such as encouraging partnerships with local government on options for supporting and enhancing local decision-making, and developing best practice.

An NPS would have the additional benefit of being a relevant matter for decision-makers in relation to section 104 of the Act. Therefore, an NPS would satisfy outcome 3 of the Sustainable Water Programme of Action.

## 3.3 Conclusions

The purpose of developing this proposed NPS is to address the key issues facing New Zealand's freshwater resources, so our future approach to resource management will achieve the sustainable management of this important resource. Although the conclusion of this section 32 assessment is that an NPS is the most appropriate option to achieve greater national guidance on achieving the sustainable management of freshwater resources, the other alternatives identified and evaluated should not be discounted, but rather could be a future part of the overall Sustainable Water Programme of Action.

In terms of alternative approaches, amendments to the RMA are a possibility. However, while some improvements to the Act could be contemplated, when the specific aspects of freshwater management are examined, significant detail and direction are needed that are not appropriate for legislation. Given the complexity of the interaction between freshwater management and land management, and the overlaps between regional and district council functions, an NPS is considered to be a more effective mechanism for achieving an improved approach to delivering more sustainable outcomes. It can do so by helping improve plan-making and decision-making.

The existing regional and district planning framework around the country (the status quo) has provided a number of improvements to water quality. In particular, point-source discharges are generally acknowledged to have improved around the country. However, there are a range of other areas (eg, non-point-source discharge management, water allocation, and the use of section 33 and 36[a]) where further improvements are required. It is possible that these improvements could occur over time, or the Minister could engage with councils to encourage further reviews, but the outcomes are less certain. Providing a nationally consistent approach to fresh water is therefore considered to be more likely to achieve sustainable management, and the status quo option has been discounted for this reason.

The NPS will, however, rely heavily on regional policy statements and regional and district plans as implementation measures. With an NPS in place there will be great certainty about what is required, and within what timeframe. This will encourage more involvement of Māori, and more certainty that the values and interests tangata whenua have in water will be widely accepted and more consistently implemented. It will also require decisions made under the RMA to recognise the national significance of New Zealand's freshwater resources.

Ministerial call-ins may be appropriate for proposals of nationally significant potential impacts on water availability and quality, but using the call-in mechanism will not establish a policy framework that will lead to improved freshwater resource management. It is considered that this alternative will not address the issues identified.

The use of national environmental standards (NES) will not provide the policy direction or framework necessary to address all the issues identified. Although NES may help to address specific issues (eg, land management or intensification) they will not address some of the wider-ranging issues that can be addressed by an NPS. It is considered that NES can work alongside an NPS, particularly where some issues become of such significance that the Government wants to provide a specific level of control (eg, over the uncontrolled intensification of agricultural land adjacent to water courses for dairying). But NES on their own are not considered an appropriate alternative to the NPS. In a similar way economic instruments and best practice guidance may also assist with improvements in freshwater management.

Table 1 summarises the seven options evaluated against the three outcomes sought by the Sustainable Water Programme of Action.

**Table 1: Evaluation of the alternatives**

| Alternative | Outcome 1 | Outcome 2 | Outcome 3 |
|---|---|---|---|
| Amendments to the RMA | × | ✓ | × |
| Incremental enhancement of the status quo | × | × | × |
| Call-in of major water projects | × | × | ✓ |
| National environmental standards | × | ✓ | ✓ |
| Economic Instruments | × | ✓ | ✓ |
| Best practice guidance | ✓ | × | × |
| National policy statement | ✓ | ✓ | ✓ |

*Outcome 1: To improve the quality and efficient use of fresh water by building and enhancing partnerships with local government, industry, Māori, science agencies and providers, and rural and urban communities.*

*Outcome 2: To improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users.*

*Outcome 3: To provide for increasing demands on water resources and encourage efficient water management through increased national direction, working with local government on options for supporting and enhancing local decision-making, and developing best practice.*

It is clear that the proposed NPS is the only option that addresses all of the three desired outcomes. However, although the NPS is the preferred option, and is considered to be the most appropriate mechanism to provide strong national guidance, other tools may be complementary.

In conclusion, an NPS is the most appropriate mechanism to address the issues for freshwater management identified, and the sustainable management of freshwater resources. It can provide a basis for achieving the outcomes specified by the Government through the Sustainable Water Programme of Action.

# 4 Section 32 Evaluation Methodology

## 4.1 Introduction

Freshwater management is an extremely complex area, and for this reason the section 32 evaluation requires a structured and systematic approach. The methodology was guided primarily by the requirements of the Act. There were two phases to the evaluation, as required by section 32:

1) an evaluation of the appropriateness of the proposed NPS objectives in achieving the purpose of the Act

2) an evaluation of proposed NPS policies; focusing on the benefits, costs, effectiveness, efficiency (and risks of not/acting) of each individual policy.

A national perspective is adopted in the evaluation of both the objectives and the policies. That is, the identification and assessment of costs and benefits include not just central, regional and local government, but also private sector interests, including businesses (eg, the agricultural sector, tourism sector, industry), households and other stakeholders. It also includes a Māori perspective to ensure relevant sections of the RMA and the role of Māori in the management of fresh water are addressed.

Taking a national perspective also means that 'transfers' between parties are ignored; that is, a benefit to one party is weighed against a cost to another, and the net effect is considered. For example, there may be a benefit to a new user and a cost to an existing user, and the relevant benefit is the difference between the new user's benefits and the costs to the existing user. The focus is thus on the *net efficiency gain* from a national viewpoint, not just the gains to the new user. This national viewpoint perspective is important, because without it the evaluation becomes overly complex and focuses on the positions of individual stakeholders.

To achieve this consideration of net effects, the evaluation of objectives takes into account the impact of the NPS on both Part II of the RMA and the economic, social, cultural well-being, and health and safety. To put it another way, consideration is given to a range of factors and perspectives, and the evaluation of policies considers specific costs to and benefits for particular groups within the community and to the environment. Special regard is given to the position of tangata whenua, with their status within this context based on their relationship with taonga and through the Treaty of Waitangi. This is explained in further detail below.

However, given the significance of the policy subject matter for this NPS, and the potentially wide-ranging impacts on tangata whenua and other stakeholders, the *distribution* of costs and benefits is also important and both sets of impacts will need to be considered. Cost−benefit analysis generally pays little or no attention to the distributional implications of a project or policy, because such impacts are often 'transfers' within the analysis.

Overall the evaluation has attempted to clearly identify the procedural elements and the expected outcomes that distinguish the NPS from the 'without NPS' scenario. The key thing about any cost−benefit analysis is that it is always focusing in on the *differences* between two scenarios.

The NPS has, in some cases, identified timeframes for implementation. In quantitative cost−benefit analyses costs and benefits occurring early are given a higher weighting than those occurring later because of the effect of discounting to reflect society's time preference (people want results sooner rather than later). In terms of outcomes, the sooner specific measures are put in place to improve the approach to water management, the sooner society will enjoy the benefits. This is noted here as a matter of principle, as in the evaluation itself there is no specific attempt to consider the relative weighting of costs and benefits as they relate to time scales.

In order to identify the differences between the 'with' and 'without' evaluation of objectives and policies, the procedural elements and outcomes of the without scenario are identified, initially in relation to each objective and then for each policy. The without scenario is a continuation of the *status quo*, but it should be stressed that a before-versus-after analysis is not being undertaken: it is a 'with' versus 'without' analysis. This means that any changes to the *status quo* that are expected to occur even without the NPS should be taken into account in describing the without NPS scenario (eg, further degradation of water quality, further intensification of land use adjacent to freshwater bodies, and improvements to freshwater management by regional councils).

Finally, given the complexity of water management, it is worth identifying the various parties that will be affected. Some parties play more than one role, and the nature of the effects will be different depending on their role (eg, a private property owner may be a water user, and also a possible source of water contamination). This approach will help identify costs and benefits (and by implication, any 'transfers').

## 4.2 Evaluation of the objectives

The meanings of the proposed objectives were closely examined to ensure they could be the most appropriate way of achieving the purpose of the Act. An analysis of the relationships between the objectives was also undertaken to gain an understanding of potential interactions, and to see if there were any overlapping or conflicting aspects to any of the objectives.

Once the meaning of each objective was clarified, they were evaluated against the purpose of the Act, which is:

> *(1) ... to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
>
> *(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

*(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

*(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

For each objective, the evaluation has included seven key elements, related to the purpose of the Act. These were:

- sustaining the potential of natural resources (section 5(2)(a))
- safeguarding the life-supporting capacity of natural resources (section 5(2)(b))
- adverse effects on the environment (section 5(2)(c))
- social well-being
- economic well-being
- cultural well-being[6]
- health and safety.

Finally, an overall assessment was made of the appropriateness of the objective as a whole in terms of achieving the purpose of the Act. The Act requires the evaluation to examine the extent to which the objectives are the most appropriate, which could be interpreted to mean they need to be assessed against all other potential alternatives. This was done as the objectives were being developed and refined over the past 12 months, during which time ongoing improvements were made to the proposed objectives and policies. This has involved many stakeholders and an 'all of government' approach. As a result, only the final versions of the proposed objectives are evaluated here, although any remaining areas of concern over the appropriateness of an objective are discussed.

## 4.3 Evaluation of the policies

The evaluation of the proposed policies required an assessment of their appropriateness in achieving the objectives. The terms used in the Act are *efficiency* and *effectiveness.*

- Efficiency refers to the costs and benefits associated with the policy. An efficient policy is one where the benefits are greater than the costs.
- Effectiveness means how successful the proposed policy would likely be in achieving the objective.

A largely qualitative approach was used in the identification and analysis of costs and benefits. Some costs in relation to the implementation of the NPS for district, regional and central government have been identified, and these are included in Appendix A. In addition, some financial impacts on the primary sector and New Zealand's 'clean green' image are included in Appendix B. Each policy was analysed and the environmental, social, economic and cultural costs and benefits were estimated. As noted above, an important element of this is identifying the parties affected by the various benefits and costs. This is particularly important as any given aspect of a policy can be a cost to some parties and a benefit to others. The distribution of costs and benefits was explicitly considered in the analysis. A summary of the costs and benefits of

[6] A detailed report identifying the impacts on Māori and tangata whenua has been prepared. The findings of this report in relation to each of the objectives and policies has been included in this main section 32 report, and a summary of key cultural costs and benefits included in the summary table.

each policy is provided and forms the basis for a commentary on the effectiveness of each policy.

The identified costs and benefits should be regarded as possibilities rather then certainties. This evaluation forms part of a much larger process of NPS development, preceding the board of inquiry process and a second section 32 evaluation, and the approach taken in this current evaluation has been to identify as many of the potential costs and benefits as possible and to provide indicative figures where possible. If, during the public consultation and board of inquiry processes, specific costs or benefits are highlighted as being of particular significance or concern, further investigation could be undertaken. However, it is worth noting that even given the most detailed evaluation work will not result in a full quantification of all costs and benefits. Economic methods for determining non-tangible considerations do exist, but they tend to be costly, time-consuming and controversial. Also, given the scale of an NPS it is virtually impossible to apply such values on a national scale, as they are more suited to project-specific outcomes. Finally, risks of acting or not acting when there was uncertain or insufficient information about the subject matter of the policies was considered.

# 5 Evaluation of the Proposed NPS

## 5.1 Introduction

This section presents the results of the evaluation of the objectives and policies.

## 5.2 Evaluation of the objectives

### Objective 1 – Enabling well-being of people and communities

To ensure that Freshwater Resources are managed in a way that enables the people and communities of New Zealand to provide for their social, economic and cultural well-being, and their health and safety.

#### a Evaluation

This objective stipulates that the management of freshwater resources must be undertaken in such a way that the social, economic and cultural wellbeing of people and communities are considered, as well as their health and safety.

The following table provides an evaluation of this objective.

**Table 2: Evaluation of Objective 1**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective directly aims to sustain New Zealand's freshwater resources to meet the reasonably foreseeable needs of future generations. |
| Safeguarding ... s5(2)(b) | The objective does not directly aim to safeguard the life-supporting capacity of New Zealand's freshwater resources in that environmental well-being is not mentioned, but this is implicit in the reference to social, economic and cultural well-being. |
| ... Adverse effects s5(2)(c) | Adverse effects on the environment are not explicitly covered by this objective, although once again this is implicit in the reference to the three well-being areas. |
| Social well-being | Social wellbeing is specifically referred to, and the management of freshwater resources would be expected to contribute to social well-being. |
| Economic well-being | Economic wellbeing is specifically referred to, and the management of freshwater resources would be expected to contribute to economic wellbeing. |
| Cultural well-being | Cultural well-being is specifically referred to, and the management of freshwater resources would be expected to contribute to cultural well-being. This objective is consistent with the values of kaitiakitanga, and with enhancing the relationship between Māori and their taonga. |
| Health and safety | Health and safety are specifically referred to, and the management of freshwater resources would be expected to contribute to the health and safety of people and communities. |

### b Summary

Objective 1 is considered to be appropriate for achieving the purpose of the Act as it specifies that management of freshwater resources must occur in a way that allows people and communities to provide for the wellbeing of areas outlined in section 5 of the RMA.

## Objective 2 – Ensuring integrated management of effects on fresh water

To ensure effective integrated management (including by the co-ordination and sequencing of Land-use Development with investment in infrastructure for supply, storage and distribution of fresh water) of the effects of Land-use Development and discharges of contaminants on the quality and available quantity of fresh water.

### a Evaluation

This objective aims to ensure that the management of effects of land-use development and discharges of contaminants is integrated. This implies that multiple land uses and contaminant discharges are considered under an integrated management framework.

The following table provides an evaluation of this objective.

**Table 3: Evaluation of Objective 2**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective aims to sustain New Zealand's freshwater resources by seeking to manage the effects of activities on fresh water. |
| Safeguarding ... s5(2)(b) | The objective directly aims to safeguard the life-supporting capacity of New Zealand's freshwater resources by addressing the effects of land-use development and the discharge of contaminants to fresh water. |
| ... Adverse effects s5(2)(c) | A consideration of effects on fresh water is specifically mentioned and would be expected through the emphasis on integrated management. |
| Social well-being | It is expected that any adverse effects on social well-being would be considered in the integrated management of freshwater resources. |
| Economic well-being | It is expected that any adverse effects on economic well-being would be considered in the integrated management of freshwater resources. |
| Cultural well-being | It is expected that any adverse effects on cultural well-being would be considered in the integrated management of freshwater resources. Integrated management is consistent with kaitiakitanga and ensures that fresh water is protected from the negative effects of land-use development and discharges. This ensures that cultural values are also protected, which are inherent in fresh water free from negative contaminants. |
| Health and safety | Health and safety are not specifically covered by this objective. |

### b Summary

Objective 2 is considered to be appropriate for achieving the purpose of the Act as it specifies that the effects of land-use development and discharges of contaminants on freshwater resources should be managed in an integrated manner. This objective is consistent with the values of kaitiakitanga and also of enhancing the relationship Māori have with their taonga. This is also appropriate in terms of sustaining the life-supporting capacity of this natural resource.

## Objective 3 – Improving the quality of fresh water

To ensure the progressive enhancement of the overall quality of Freshwater Resources, including actions to ensure appropriate Freshwater Resources can reach or exceed a swimmable standard.

### a Evaluation

This objective refers to an 'enhancement of the overall quality' of fresh water. The term 'overall' implies that the focus is on improving the quality of New Zealand's collective freshwater resource.

The reference to appropriate resources being able to 'reach or exceed' avoids the potential interpretation that a swimmable standard is a capped objective. It provides for water which may have uses and values requiring a higher quality than this standard.

No timeframe is specified in the use of the term 'progressive', which recognises the significant challenges involved and the fact that there will be multiple solutions and many stakeholders, all of which will involve time.

The following table provides an evaluation of this objective.

**Table 4: Evaluation of Objective 3**

| RMA provision | Evaluation |
|---|---|
| Sustaining ...<br>s5(2)(a) | The objective would be expected to help sustain the potential of freshwater resources through an overall enhancement in the quality of the resource. The objective provides for water having uses and values that require a high quality to exceed the swimmable standard if appropriate. However, the focus on *overall* enhancement does mean that not all existing low-quality freshwater sources may be addressed. |
| Safeguarding ...<br>s5(2)(b) | The life-supporting capacity of freshwater resources would be expected to be safeguarded, although once again the danger of focusing on *overall* enhancement is worth noting. Resource management decisions imply that judgement and weight are required in appropriate circumstances. |
| ... Adverse effects<br>s5(2)(c) | By implication the objective relates to the avoidance, remedy and mitigation of adverse effects on freshwater resources to achieve an overall enhancement. |
| Social well-being | An overall enhancement in freshwater quality would be expected to improve social well-being. For instance, recreational opportunities would likely be enhanced. |
| Economic well-being | An overall enhancement in freshwater quality would be expected to improve economic well-being. For instance, economic opportunities relating to New Zealand's 'clean green' image would be maintained and enhanced. |
| Cultural well-being | Improving water quality directly recognises the Māori cultural values associated with water and the concept of kaitiakitanga, and is also consistent with the ethos of protecting the taonga and its inherent mauri. |
| Health and safety | Human health is affected by water quality, in particular the presence of *E. coli* and faecal coliforms. Enhanced water quality would therefore promote the health of communities and individuals. |

### b Summary

Objective 3 is appropriate for achieving the purpose of the Act because an overall enhancement of the quality of New Zealand's freshwater resources is consistent with achieving sustainable management. The use of the term 'overall' may need to be reconsidered as it could potentially divert attention away from addressing waterways with existing low water quality. This risk is also increased when Objective 3 is taken in conjunction with Objective 5, which states that further degradation should be avoided. There is the possibility that those freshwater resources that are most degraded may be placed in the 'too hard basket', but overall the objective itself is clear, and will meet the purpose of the Act.

## Objective 4 – Recognising and protecting life supporting capacity and ecological values

To ensure the life supporting capacity and ecological values of Freshwater Resources are recognised and protected from inappropriate –

(a) taking, use, damming or diverting of fresh water; and

(b) Land-use Development; and

(c) discharges of contaminants.

### a Evaluation

This objective aims to protect the life-supporting capacity and ecological values of freshwater resources. The term 'ecological values' is not defined in the proposed NPS or in the Act, but it is included in the definition of 'notable values' included in the proposed NPS. It is unclear how ecological values may differ from life-supporting capacity.

The following table provides an evaluation of this objective.

**Table 5: Evaluation of Objective 4**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective directly aims to sustain New Zealand's freshwater resources, although the terms used are 'recognise and protect' rather than sustain. |
| Safeguarding ... s5(2)(b) | The objective directly aims to safeguard the life-supporting capacity of New Zealand's freshwater resources, including the ecological values they contain. |
| ... Adverse effects s5(2)(c) | Adverse effects on freshwater resources, such as those arising from land-use development, are addressed implicitly. |
| Social well-being | Social well-being is provided for through sustaining recreational and amenity values that depend on the life-supporting capacity and ecological values of freshwater resources. In some cases these may conflict. |
| Economic well-being | Economic well-being is indirectly promoted through the improved long-term sustainability of freshwater resources. |
| Cultural well-being | The objective is consistent with the ethos of kaitiakitanga and is important for ensuring that the people and other ecosystems reliant on water, which connects all things, are protected. The importance of indigenous flora and fauna is recognised. |
| Health and safety | The health and safety of communities will be improved as a result of this objective, including through a greater focus on managing the life-supporting capacity of water, and protecting the environment from discharges that may be harmful. |

### b Summary

Objective 4 is appropriate for achieving the purpose of the Act.

## Objective 5 – Addressing freshwater degradation

To control the effects of Land-use Development and discharges of contaminants to avoid further degradation of Freshwater Resources.

### a Evaluation

This objective aims to protect freshwater quality from further degradation. Two specific activities are focused on: land-use development and the discharge of contaminants. Note that the objective does not aim to address existing causes of water-quality degradation specifically, but this will come into play as permits expire and are re-consented, and if regional councils choose to use section 128(b) when any new rules regarding water become operative. However, new controls on land-use development may have an impact on permitted land uses, or consented ones if they propose any changes.

The objective does provide a strong focus on the impacts of land use on degraded fresh water, and from this perspective is likely to provide strong direction to district and regional councils that increased emphasis on controlling land use is required. Discharges are reasonably well controlled at present, and the impact of the NPS will be to recognise the importance of discharge control at a national level, with a specific focus on avoiding further degradation of water quality.

The following table provides an evaluation of this objective.

**Table 6: Evaluation of Objective 5**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective directly aims to sustain New Zealand's freshwater resources by preventing further degradation. |
| Safeguarding ... s5(2)(b) | The objective directly aims to safeguard the life-supporting capacity of New Zealand's freshwater resources by preventing further degradation. |
| ... Adverse effects s5(2)(c) | The objective would be expected to promote the avoidance and mitigation of adverse effects of land-use development and the discharge of contaminants on water quality. It would not be expected to help remedy existing causes of degradation. (This should be read in conjunction with policy 6.) |
| Social well-being | Social well-being is enabled through the promotion of the continued recreational use and enjoyment of freshwater resources. |
| Economic well-being | Economic well-being is enabled through the considerable economic benefit derived from the maintenance and enhancement of New Zealand's clean green image. |
| Cultural well-being | The objective is consistent with the ethos of kaitiakitanga and protecting the mauri of the waters, as well as other Māori values as they relate to fresh water. It is particularly important for the protection of mahinga kai. |
| Health and safety | Human health is affected by water quality, in particular the presence of *E. coli* and faecal coliforms. Improved water quality would therefore promote the health of communities and individuals. |

## b Summary

Objective 5 is largely appropriate for achieving the purpose of the Act. Although there is nothing in the proposed objective that makes it inconsistent with the purpose of the Act, there is some doubt as to whether it is the *most* appropriate. There are clearly many different tools available to achieve this objective. One concern with the objective in its current form is its exclusive focus on future land-use development without having any regard for current patterns of land use. It is clear from preceding discussions that previous land-use activities are substantially responsible for the current situation of degraded freshwater resources. Although Objective 3 does identify the need for progressive enhancement of water quality, it does not specifically refer to land use as a predominant cause of degradation.

On balance, however, it is concluded this objective is the most appropriate for achieving the purpose of the Act. This objective, like all of the other objectives, omits any explicit aim to address existing causes of freshwater degradation, but this aim can be seen as being implicit given the powers councils have under section 128(b). It can also, over time, address current practices as changes are sought to existing consents, intensification is proposed, and consents expire and come up for review, but this will clearly take a longer and undefined time period in which to achieve significant environmental improvements.

## Objective 6 – Managing demand for fresh water

To ensure that demands (including social, economic and cultural demands) for fresh water are sustainably managed in a manner that has regard to the following:

(a) available supply of fresh water:

(b) the need to provide for resilience against the biophysical effects of climate change (such as through infrastructure for supply, storage and distribution of fresh water):

(c) the adverse effects that arise from those demands.

### a Evaluation

This objective states that water should be used in a sustainable manner, which has regard to the supply available and the adverse effects that arise from the take of water. This requires consideration of both the existing availability as well as the future supply available under a changing climate.

The following table provides an evaluation of this objective.

**Table 7: Evaluation of Objective 6**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective directly aims to sustain New Zealand's freshwater resources and the needs of communities (both current and future) for fresh water. |
| Safeguarding ... s5(2)(b) | The objective directly aims to safeguard the life-supporting capacity of New Zealand's freshwater resources. Managing water take is likely to ensure that the most sustainable uses of water are consented. |
| ... Adverse effects s5(2)(c) | Adverse effects on the environment are explicitly covered by this objective, including cumulative effects, which is particularly important in freshwater management. |
| Social well-being | Social well-being is provided for through sustaining recreational and amenity values that are dependant on a high level of water quantity. |
| Economic well-being | Economic well-being is promoted through the improved long-term sustainability of freshwater resources, and, in particular, increased future resilience. |
| Cultural well-being | This objective is consistent with the ethos of kaitiakitanga and specifically refers to cultural demands for customary and contemporary uses. |
| Health and safety | The recognition of cultural values, tangata whenua values and amenity values associated with fresh water would be expected to contribute to the improved physical and mental health of individuals and communities, including their sense and pride of place. |

### b Summary

Objective 6 is appropriate for achieving the purpose of the Act because it addresses all seven elements of the purpose.

## Objective 7 – Efficient use of fresh water

To ensure that allocated fresh water is used efficiently particularly in terms of the following:

(a) avoiding wastage:

(b) avoiding excessive contamination:

(c) facilitating opportunities to increase benefits from the use of fresh water.

### a Evaluation

This objective recognises that there is the potential for water to be allocated in a manner that is potentially not sustainable. That can be as a result of the inefficient use of water, creating waste, or foregoing the opportunity to put water to a more efficient use at some future point.

The aim of this objective is therefore to guide regional councils to ensure water is used more efficiently. This will require councils to allocate water efficiently, based on knowing water takes and not over-allocating in a specific catchment or aquifer. A greater focus on ensuring security of supply will also be required. This will require all councils to have clearer information on how much water is being used, although many regional councils do have good information already. Water takes can result in contamination of waterways, and the objective aims to ensure excessive contamination does not occur through inefficient allocation of water.

The following table provides an evaluation of this objective.

**Table 8: Evaluation of Objective 7**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective would be expected to contribute to sustaining the freshwater resource by promoting the efficient use of the resource. |
| Safeguarding ... s5(2)(b) | The objective indirectly aims to safeguard the life-supporting capacity of the freshwater resource for the same reason outlined in relation to s5(2)(a). |
| ... Adverse effects s5(2)(c) | Adverse effects on the environment are not covered, except that the focus is on avoiding wastage and excessive contamination. |
| Social well-being | Social well-being would be provided for as communities have a better focus on the management of water, and allocation of water can be revisited over time to ensure uses are efficient and not 'locked away'. |
| Economic well-being | Economic well-being is promoted through improved efficiency of the freshwater resource. |
| Cultural well-being | This objective is consistent with the ethos of kaitiakitanga and ensures that indigenous ecosystems, the mauri and other Māori cultural values will be maintained and enhanced through the appropriate management of water. |
| Health and safety | Health and safety are not provided for by this objective, except that avoiding excessive contamination will likely improve water management in some catchments, potentially those involved in water supply for domestic or consumptive use. |

### b Summary

Objective 7 appears to be an appropriate means to achieve the purpose of the Act. The importance of managing water allocation is identified in the Act, and this objective will enable decisions to be made which allow sustainable management of the water resource, with particular regard to future generations.

## Objective 8 – Iwi and hapū roles and Tangata Whenua Values and Interests

To ensure that iwi and hapū are involved, and Tangata Whenua Values and Interests are identified and reflected, in the management of Freshwater Resources including the matters specified in Objectives 1–7.

### a Evaluation

This objective recognises the important relationship that tangata whenua have with fresh water, and that their involvement in resource management is entirely appropriate alongside those authorities with statutory responsibly for water and land management under sections 30 and 31 of the Act.

The following table provides an evaluation of this objective.

**Table 9: Evaluation of Objective 8**

| RMA provision | Evaluation |
|---|---|
| Sustaining ... s5(2)(a) | The objective would be expected to sustain the potential of freshwater resources through the implementation of kaitiakitanga and the inherent values of protection and enhancement, while also ensuring the tikanga and kawa of each iwi and hapū are maintained. |
| Safeguarding ... s5(2)(b) | The life-supporting capacity of freshwater resources would be expected to be safeguarded through the implementation of kaitiakitanga and other values of manaakitanga, whakapapa and whanaungatanga. |
| ... Adverse effects s5(2)(c) | By ensuring that tangata whenua are appropriately involved, alternative methods of avoiding, remedying or mitigating the adverse effects of activities on the environment can be identified and implemented. Kaitiakitanga and other tangata whenua values are consistent with this objective. |
| Social well-being | Tangata whenua have a spiritual and physical connection to fresh water. By being involved in the management of fresh water to improve its overall health, there will be flow-on effects to Māori communities, enhancing their social well-being. |
| Economic well-being | Ensuring that Māori are appropriately involved reduces compliance costs and provides further national opportunities. For instance, economic opportunities relating to New Zealand's Māori tourism sector and the clean green image will be maintained and enhanced. |
| Cultural well-being | Māori will be able to implement their roles as kaitiaki, and their relationship with their taonga will be strengthened. |
| Health and safety | Human health is affected by water quality, in particular the presence of *E. coli* and faecal coliforms. Enhanced water quality through the implementation of matauranga Māori and kaitiakitanga would therefore promote the health of communities and individuals. |

### b Summary

Objective 8 is consistent with the values of kaitiakitanga and with enhancing the relationship of Māori with their taonga. This objective is also considered to be the most appropriate means to achieve the purpose of the Act.

## Objective 9 – Ensuring effective monitoring and reporting

To ensure that regional councils and territorial authorities undertake effective monitoring and reporting of the matters specified in Objectives 1–8.

### a Evaluation

Monitoring and reporting at national, regional and local levels are critical tasks.

### b Summary

Although this objective is not evaluated against the requirements of section 5 of the Act in detail, it is considered to be an appropriate means to achieve sustainable management. The objective is considered to be highly appropriate and most important, as it will provide the community and decision-makers with valuable information on progress towards the matters outlined in Objectives 1–8. Monitoring and reporting is a well established principle of resource management practice in New Zealand, and is wholly consistent with the participatory and democratic ethos of the Act.

# 5.3 Evaluation of the policies

## 5.3.1 Policies 1, 2 and 3

### Policy 1

By the second anniversary of the date of commencement of this National Policy Statement, every regional council must notify, in accordance with Schedule 1 of the Act, a proposed regional policy statement or variation to a proposed regional policy statement or change to its operative regional policy statement in order that as soon as practicable thereafter every regional policy statement specifies objectives, policies and methods which –

(a) Determine and timetable priorities for when regional plans will set Freshwater Quality Standards and Environmental Flows and Levels for all Freshwater Resources of the region; and

(b) Identify Notable Values (including potential values) of –
  (i) Any Outstanding Freshwater Resources; and
  (ii) Any Degraded Freshwater Resources; and

(c) In accordance with Policy 1(a) and (b), guide and direct the setting in regional plans for all Freshwater Resources of the region of –

(i) Freshwater Quality Standards; and

(ii) Environmental Flows and Levels;

including for the protection of Notable Values of any Outstanding Freshwater Resources and the enhancement or restoration of Notable Values of any Degraded Freshwater Resources; and

(d) Guide and direct local authorities as to the involvement of iwi and hapū in the management of, and decision-making regarding, all Freshwater Resources of the region, including but not limited to, requiring local authorities to disclose how they are intending to achieve this involvement; and

(e) Identify Tangata Whenua Values and Interests in respect of all Freshwater Resources of the region; and

(f) Guide and direct regional and district plans (including considerations for the determination of resource consent applications and notices of requirement) in relation to the recognition of Tangata Whenua Values and Interests in respect of all Freshwater Resources of the region; and

(g) Guide and direct regional plans (including considerations for the determination of resource consent applications) to restrict existing takes, uses, damming and diversion of fresh water in order to sustain Notable Values and non-consumptive Tangata Whenua Values and Interests in times of low flow; and

(h) Guide and direct regional and district plans (including considerations for the determination of resource consent applications and notices of requirement) to effectively manage Land-use Development and discharges of contaminants to control the adverse effects of the discharge of contaminants into fresh water or onto or into land in circumstances where contaminants may enter fresh water; and

(i) Guide and direct regional and district plans (including considerations for the determination of resource consent applications and notices of requirement) to manage demands for fresh water, including demands arising from Land-use Development and discharges of contaminants, in a manner which –

(i) Provides certainty to communities and water users (including as appropriate through prioritisation of allocation for takes of fresh water for reasonably foreseeable Consumptive Use); and

(ii) Provides priority for reasonably foreseeable domestic water supply, over other competing demands, provided that appropriate demand strategies are established for such supply; and

(iii) Promotes efficient Freshwater use (including through the transferability of resource consents, where appropriate); and

(iv) Increases resilience to the effects of climate change; and

(v) Controls adverse effects; and

(j) Guide and direct regional and district plans (including considerations for the determination of resource consent applications and notices of requirement) to ensure integrated management of the effects of Land-use Development –

(i) by encouraging co-ordination and sequencing of infrastructure for supply, storage and distribution of fresh water; and

(ii) by controlling adverse effects (including associated discharges of contaminants) on the quality and available quantity of Freshwater Resources.

## Policy 2

Every regional council must –

(a) By the date or dates specified in the regional policy statement, notify a proposed regional plan, change or variation, to set Freshwater Quality Standards and Environmental Flows and Levels for the Outstanding, Degraded and other Freshwater Resources of the region to give effect to the regional policy statement in relation to the matters in Policies 1(a) to (c); and

(b) By no later than 40 working days following the date a regional policy statement or change notified pursuant to Policy 1 is made operative, every regional council must notify a proposed regional plan, change or variation to give effect to the regional policy statement in relation to all other matters in Policy 1; and

(c) By no later than 40 working days following the date a regional policy statement or change notified pursuant to Policy 1 is made operative, every regional council must notify a proposed regional plan, change or variation to include rules to achieve the following:

(i) Require that all water permits for the Consumptive Use of fresh water granted after the date of commencement of this National Policy Statement include conditions for the efficient Consumptive Use of fresh water including, as a minimum, providing for the use of industry good practice and technology to achieve efficient use:

(ii) Require that all water permits for the Consumptive Use of fresh water granted after the date of commencement of this National Policy Statement include conditions for, where appropriate, the return of fresh water to Freshwater Resources, in order to achieve the requirements of paragraph (a) of this Policy:

(iii) Require that all discharge permits affecting Freshwater Resources granted after the date of commencement of this National Policy Statement include conditions for –

(A) Protection against degradation of the quality of fresh water of Freshwater Resources (including through the management of activities giving rise to stormwater discharges); and

(B) Sustainable management of demands on fresh water in a manner which has regard to available supply of fresh water and adverse effects, both individual and cumulative; and

(C) Integrated management of the effects of Land-use Development and discharges of contaminants on the quality and available quantity of Freshwater Resources;

to be achieved, as a minimum, by the use of industry good practice:

(iv) Require effective monitoring and reporting on matters relating to paragraphs (c)(i), (ii) and (iii) of this Policy.

## Policy 3

By no later than 40 working days following the date a regional policy statement or change notified pursuant to Policy 1 is made operative, every territorial authority must notify a proposed district plan, change or variation in order that as soon as practicable thereafter every district plan –

(a) Gives effect to the regional policy statement; and

(b) Includes rules to require that all relevant land-use and subdivision consents granted after the commencement of this National Policy Statement include conditions for –

  (i) Protection against degradation of the quality of fresh water of Freshwater Resources (including through the management of activities giving rise to stormwater discharges); and

  (ii) Sustainable management of demands on fresh water in a manner which has regard to available supply of fresh water and adverse effects, both individual and cumulative; and

  (iii) Integrated management of the effects of Land-use Development and discharges of contaminants on the quality and available quantity of Freshwater Resources; and

  to be achieved, as a minimum, by the use of industry good practice; and

(c) Includes rules to require that all relevant land-use and subdivision consents granted after the commencement of this National Policy Statement include conditions to require monitoring and reporting on matters relating to paragraph (b).

Policy 1 is the most substantial of all the nine policies. Policies 2 and 3 require regional councils and territorial authorities to give effect to Policy 1 through changes to regional and district plans (respectively). This cascading series of changes and requirements is relatively complex, and there is considerable overlap between a number of the policies. For this reason it is simpler to evaluate Policies 1, 2 and 3 together.

Many of the policies are particularly complex and introduce many new terms. However, there are two key elements to be assessed in Policies 1–3: the costs and benefits of making the proposed changes, and the costs and benefits of the proposed amendments once they are implemented.

## a Evaluation

Policy 1 directs regional councils to change their existing regional policy statements to give effect to the proposed NPS within two years of the commencement of the NPS. Policy 2(a) requires regional councils to change their regional plans within a time defined in the regional policy statement to give effect to the matters in Policy 1(a) to 1(c). Policy 2(b) directs regional councils to change any existing regional plans to give effect to the revised regional policy statement within 40 working days of that regional policy statement amendment being made operative. Policy 3 directs territorial authorities to change any existing district plans to give effect to the revised regional policy statement within 40 working days of that regional policy statement's changes being made operative.

There are two key aspects of making the required changes to regional and district planning provisions: the costs incurred in going through the statutory requirements under the Act, and the collection of technical and community information required to inform the changes.
Policy 1 (and the entire NPS) contains four important terms relating to different types of freshwater resources:

- degraded freshwater resources
- outstanding freshwater resources
- freshwater resources
- tangata whenua values and interests.

Underlying the definition of these terms is the concept of 'notable values', which includes scientific, ecological, biodiversity, cultural and recreational values. To implement Policy 1, regional councils would need to identify the freshwater resources that were considered to be degraded and outstanding. They would also need to work with local iwi and hapū to identify tangata whenua values and interests, and to review and update existing iwi and hapū planning documents.

### Costs of collecting information

Some of the technical information would already be available, but it is expected that most councils would need to collect further information – which would incur a cost, estimated to be in the order of two full-time equivalent staff per regional council. It would be expected that some guidance and resourcing from the Ministry for the Environment would be provided, at an estimated cost of $250,000. A wider range of groups would also be involved in the identification and assessment of freshwater resources, including the Department of Conservation, landowners, iwi and recreation groups. Through their involvement these groups would likely incur financial and time costs.

The main requirement on collecting information for the amendments would fall on regional councils, but it is likely that district councils would also have to undertake some information collection. In particular, the emphasis on the integration of land use and freshwater management means that district councils would likely work alongside regional councils. For the purposes of this evaluation, this cost has been estimated at one additional full-time-equivalent per district council for one year.

### Costs of making statutory plan changes

The cost of undertaking the statutory plan change process is likely to be variable, and will depend on factors such as the degree of change required by a council to give effect to the NPS and the size and nature of the geographical area under the jurisdiction of the council. The estimates given assume that regional councils will have to undertake a more substantial plan change than territorial authorities. Regional policy statement changes and hearings associated with them will be undertaken first. Costings then assume that where regional councils are required to make changes to regional plans (under Policies 1 and 2), this will be conducted under a single process, with a combined notification and hearing procedure, etc.

It is assumed that processes to give effect to policies at a regional and territorial level will not be combined, although there may be opportunities for this to occur in some cases. It is also assumed that all councils will initiate a completely new plan change to give effect to the proposed NPS. That is, existing plan changes or second-generation policies and plans currently being developed have been discounted. This means the figures provided in this evaluation

represents the worst-case scenario, and in reality opportunities will likely exist for the cost to councils to be reduced.

It is estimated that the costs would be $4 million to regional councils and $10.1 million to territorial authorities. With staff costs included, this gives a total financial cost of Policies 1−3 of $30.6 million to regional councils and $37.3 million to territorial authorities. All further costs and benefits associated with Policies 1−3 will derive from the implementation of the proposed policies.

### Costs of identifying tangata whenua values and interests

A significant amount of investigative work will be required to identify tangata whenua values and interests. It could be expected that resourcing of further documents and reviews of current iwi and hapū planning documents will be required. Regional councils currently do not have the internal capacity to carry out this work, nor are they mandated to by iwi. It is expected that some of the costs will fall on iwi and hapū, who generally have small, sometimes voluntary, environmental teams. The NPS will also increase pressure on tangata whenua to provide timely advice and appropriate information to be utilised within the regional policy statements. Provision of support may be needed for iwi and hapū to meet these requirements. Support may be by way of memoranda of understanding, education programmes, and direct resourcing for the development of relevant regional policy statement objectives, policies and methods that are applicable to tangata whenua.

Although there are clear sections in Policy 1 that work to enable Māori involvement, implementation lies with regional councils. Further work is needed to address how best these sections will be implemented so that they are actually providing decision-making powers to tangata whenua. Capability will need to be built in regional councils for information about tangata whenua values and interests to be used appropriately and meaningfully to meet the objectives.

This process will result in benefits, particularly through building long-term relationships, which will help reduce the substantial compliance costs of managing relationships between applicants, councils and tangata whenua. Māori involvement in the development of changes to the regional policy statements and regional and district plans, regarding freshwater quality standards and environmental flows under the NPS, will enable iwi and hapū involvement in management and decision-making regarding freshwater resources, thus ensuring their concepts and values (such as giving effect to or restoring the mauri of waterways) are part of the water management framework. Through Policy 1, greater understanding and recognition of tangata whenua values and interests in fresh water will be communicated, allowing the wider community to better comprehend the perspectives of tangata whenua and add value to stakeholder relationships and tangata whenua in the wider community.

### Costs of implementation

Once degraded and outstanding freshwater resources have been identified, councils are required to use freshwater quality standards and environmental flows and water levels to protect outstanding freshwater resources and enhance or restore degraded freshwater resources. How this will be implemented by councils is likely to vary and may, in some cases, not result in any substantial change from the status quo. The identification of freshwater resources as being either degraded or outstanding by councils will effectively determine the degree of change from the status quo that will be required. In regions where flow and water levels are not substantially different from current standards, the change from the status quo is likely to be minimal.

An important assumption underlying the assessment of costs and benefits is that the implementation of the proposed NPS will not result in the setting of standards that are lower than at present: it is assumed that standards will either not change or will be higher than at present. This is a reasonable assumption to make given that the NPS will strengthen the mandate to address water quality and water quantity issues in resource management processes, and will not result in any change in the legislative mandate. In effect, it introduces an additional set of provisions, without altering the existing legislative mandate for managing freshwater resources currently provided by Part II of the Act.

Policies 1−3 aim to improve the quality of degraded freshwater resources and protect outstanding freshwater resources. These two categories are based on scientific, ecological, biodiversity, cultural and recreational values (known as 'notable values'). The improvement and protection of these respective categories of freshwater resources is to be achieved through the use of freshwater quality standards and environmental flows and water levels would result in costs to some parties and benefits to others. It is important to be clear about the nature of these two terms. 'Freshwater quality standards' refers to any rule (in a regional or district plan) that gives effect to the NPS. 'Environmental flows and water levels' also refers to rules, but only in relation to the allocation of water for consumptive use.

Once revised provisions are in effect (these must be notified within two years of the commencement of the NPS), work would be undertaken to improve degraded freshwater resources and protect outstanding freshwater resources. What this would entail would be variable, but it would be expected that activities and land uses that were making significant contributions to degraded water quality would be identified as plan requirements change, consents are renewed, or land owners change the nature of their activity and trigger requirements for consents under the new regime imposed by the NPS. The costs of implementation are therefore likely to be spread across various groups, including councils, landowners, consent holders and others.

### Costs to individuals and groups degrading water quality

Current causes of degraded water quality are predominantly agricultural run-off, unrestricted stock access to waterways, leaching of nutrients and agrichemicals into waterways and groundwater, industrial point-source discharges, and urban stormwater run-off. These areas will be the focus of efforts to improve water quality. Economic costs will therefore primarily be incurred by individuals and groups whose activities are degrading water quality. Costs are likely to be incurred through improved discharge treatment standards, improved nutrient management, increased riparian planting and the exclusion of stock from waterways.

These costs will not be borne equally across the agricultural and industrial sectors, but will be incurred largely by those causing the damage. In the agricultural sector, for instance, some progress has already been made under the Dairying and Clean Streams Accord. Regional council advocacy programmes, such as that of the Otago Regional Council, have achieved some good results. This means that those agricultural and industrial water users already engaging in good practice may not be affected by increased water quality standards. The main group affected by the introduction of new provisions into regional and district plans would be those who continue to engage in 'unsustainable' practices. The cost of implementing improvements to practice and infrastructure are likely to be incurred directly by landowners and businesses, in the cases of agriculture and industry, respectively.

In the case of agriculture, this may result in some level of decreased productivity of agricultural land. A report by Harris Consulting (2008) commissioned by Ministry of Agriculture and Forestry estimates that most primary sectors should be able to reduce contaminated discharges

by 10 per cent, and that this may meet generalised water standards. The report estimates that measures to ensure a 10 per cent reduction would cost the land users between $0 and $5,500 for each dairy farm, $1,000 to $3,000 for each sheep farm, and $10,000 for each high-country farm. Reductions in contaminated discharges of 30−40 per cent, which are estimated to be needed to protect outstanding or sensitive water bodies, would have significant costs for landowners, with estimated annual costs of $15,000 for relevant smaller dairy farms, $35,000 for larger dairy farms, and $5,000 to $25,000 for sheep, beef and deer farms.

The Harris Consulting report estimates that an 80 per cent reduction in microbial discharges is needed to meet contact recreation standards in most water bodies, and this will not be achieved without significant costs and land-use changes. The NPS therefore has significant implications for landholders in the primary sector, but the nature and extent of the impact are heavily dependent on how it is implemented by councils.

For industrial activities, increased investment in infrastructure may be required to improve the quality of discharges from sites. This cost is likely to be a one-off in most cases, although it may have an ongoing component. It should also be noted that the majority of industrial discharges are point source and have usually been well controlled under the discharge provisions of the Act.

Costs associated with the improvement of urban stormwater would be incurred by territorial authorities, and these costs are ultimately covered by ratepayers. Methods to improve discharges would include improved discharge treatment, riparian planting and wetland restoration, and public education programmes, as well as improved approaches to town planning and developments such as low-impact design.

### Economic benefits

The greatest economic benefit will probably stem from the maintenance and enhancement of New Zealand's clean green international image, which has been conservatively estimated to be worth $1,000 million per annum.[7] Two of the country's most important sectors – agriculture and tourism – derive immeasurable benefit from this international image. In a global marketplace where consumers are becoming increasingly conscious of the environmental impact of the production and transport of goods, the influence of this image should not be underestimated. Although freshwater quality is only one aspect of the environment, it is an important part of the clean green image.

Other economic benefits would be derived from decreased water treatment costs in areas where drinking-water is sourced from degraded catchments. This will primarily benefit those organisations responsible for drinking-water supply (typically regional or district councils). The cost of water-borne disease in New Zealand has been estimated at $25 million per annum (Cowie and Nokes, 2006). Improved water quality will also benefit industrial and agricultural water users, particularly where water is used in food manufacturing processes or for stock drinking-water.

[7] See Appendix 1. This is an estimated order-of-magnitude assessment only, and has a number of assumptions.

## Social and health benefits

The improvement of water quality will have social and health benefits to the users of rivers and lakes, and may have some tangible benefits in terms of reduced costs to the health system from water-borne disease. Tait and Cullen (2006) note that levels of *campylobacter* are significantly higher in rural water bodies than in non-rural water bodies. Rates of *campylobacter* infection notification have increased from 14 cases per 100,000 in 1981 to 396 cases per 100,000 in 2003 (ESR, 2005).

Further social benefits may be derived from an increase in public awareness about the importance of water to our quality of life. This is likely to be achieved through the recognition of fresh water as an issue of national significance. The NPS process, including the public submission process, is likely to achieve this as a wider range of individuals and groups become involved in freshwater management.

## Ecosystem benefits

The primary benefit to the environment will be through an improvement to freshwater ecosystems. The bio-physical characteristics of water have a significant influence on the ability of a system to sustain aquatic species. This includes not only species living in fresh water, but also species living in and around the margins of fresh waters. Although the focus of the NPS is on the quality of the water itself, some of the likely measures would have benefits beyond the waterway.

For instance, the riparian planting of waterways in urban and rural areas can help to create valuable ecological corridors that can have a significant benefit far beyond the waterway itself. There are also well-documented well-being benefits to people from having green cities and towns, for example.

## Cultural benefits

Improved water quality, and the benefits for related ecosystems, will provide a number of significant cultural benefits. These relate to Māori cultural values and the values New Zealand society as a whole places on water. For Māori, water holds particular importance because of its life-giving essence. Water is a prominent feature of Māori mythology and the Māori world view. It holds special significance as a food source (mahinga kai), transport route and resource for future generations.

Cultural benefits would not only be limited to Māori. As a country with many freshwater settings, water is an important part of New Zealand's identity and history. As such, improvement to the quality of fresh water will provide a cultural benefit to many New Zealand communities. Many people remember swimming in various locations around New Zealand in their youth, and improving degraded waterways will provide cultural benefits to many people in this situation.

It is important to note that the identification of tangata whenua values and interests may also have some cultural costs for tangata whenua, as information of this nature can be culturally sensitive and hold great meaning to tangata whenua. Provision of this information to the public arena will have to be carefully considered by Māori. There are also concerns among Māori that tangata whenua values and interests may not be given a high enough priority when balanced against other issues of natural interest. Also, the ranking of the importance of waterways is of

concern to Māori because all are considered significant and valid to each hapū and iwi. It is important that a flexible approach be adopted for identifying tangata whenua values and interests to reflect tribal and hapū differences.

### Costs and benefits for environmental flows and water levels

An important tool in Policies 1−3 is the establishment of environmental flows and water levels in lakes, wetlands and groundwater aquifers. A number of factors need to be considered when determining minimum water levels, including sustaining freshwater ecosystems, amenity and cultural values, and foreseeable land-use changes. Closely related to environmental flows and water levels is a proposed NES on Ecological Flows and Waters Levels and a proposed NES on the Measurement of Water Takes. The NES for Ecological Flows and Waters Levels refers solely to ecological characteristics, which form part of a broader 'environmental flow' that also incorporates social, economic and cultural considerations. The NES for the Measurement of Water Takes outlines standards for the measurement of the abstraction of water (known as water takes). These proposed NES are standards that will complement environmental flows and water levels.

In determining the costs and benefits of environmental flows and water levels, there is an assumption that in the majority of cases environmental flows will be established that are the same or greater than at present, meaning there will be the same or less water available for consumption. Reduced availability of water for consumption will predominantly occur in systems where water is already abstracted to levels that have negative ecological, social and cultural consequences. It is reasonable to assume, therefore, that overall, stronger provisions for imposing environmental flows will result in reduced levels of water for consumption.

The main economic costs incurred by the introduction of environmental flows will be for those who currently take and use fresh water in significant volumes. This category covers three main groups: local government taking water for domestic water supply; the agricultural sector taking water for irrigation and stock drinking-water; and other industry taking water for industrial processes.

The other main activity using fresh water is the hydroelectricity sector, although it should be noted that hydroelectric generation does not actually involve the taking of water as such. Rather, it involves making major changes to environmental flows at any given point in a system and at any given time during the year.

It is possible that environmental flows and water levels could have some impact on hydroelectric generation. Many hydroelectric schemes have minimum environmental flows as part of their operating conditions, but there could be some changes to specific flow rates if minimum flow rates are increased as a result of ecological research and higher community-determined standards. In cases where minimum environmental flows are increased, this may mean that less water is able to be stored for generation. This could decrease the resilience of the generation network, in some circumstances, and ultimately increase electricity prices in those cases. However, such events are only discussed as possibilities rather than certainties.

There is the potential for a reduced amount of water to be available for domestic use. The economic cost of this is unclear, although the social cost in terms of imposing water restrictions could be significant. Many urban and rural areas in New Zealand currently experience water restrictions at certain times of the year. The frequency of these restrictions may increase if environmental flows and water levels are introduced that reduce the amount of water able to be taken. Exactly how this will affect agricultural productivity will vary on a case-by-case basis and is impossible to quantify. It is not expected, however, that agricultural production will be

significantly reduced. Those agricultural producers who are most likely to be affected are either those on highly marginal land or those who are currently using water in a highly inefficient manner.

If agricultural production were to be reduced in a certain area, a subsequent reduction in agribusiness and changes to the social fabric of the rural townships is possible. Conversely, the promotion of increased water efficiency could stimulate research into, and development of, water-efficient technologies, providing an economic benefit. Similarly, the increased use of environmental flows may create more pressure for the development of large water storage and distribution schemes. This is because these schemes can help overcome issues with water shortages during extended periods of drought by effectively enabling the transfer of water from periods of excess to periods of shortage. Such schemes can also help increase resilience to the impacts of climate change in terms of reduced overall rainfall and increased variability in rainfall in some areas.

The more widespread use of environmental flows and water levels will ultimately improve freshwater ecosystems. This will be through increased in-stream flows and the protection and regeneration of groundwater systems. These benefits will be widespread. As discussed previously in relation to water quality, it will contribute to the maintenance and enhancement of New Zealand's clean green image.

The social benefits of improved aquatic ecosystems and increased environmental flows are improved angling and food-gathering (including mahinga kai) opportunities and recreational opportunities. The cultural benefits of improved environmental flows are significant, and will recognise the importance of healthy freshwater systems to Māori. The policy also benefits all New Zealanders by recognising that water is an important aspect of our national identity.

## b Summary

Table 10 provides a summary of the costs and benefits of Policies 1−3. Overall, it is considered that the policies would be effective at achieving many of the objectives, notably Objectives 2, 3, 4 and 5. They would also be relatively efficient, with the benefits outweighing the costs. The costs are likely to be borne mainly by those contributing to degraded water quality or using water in an inefficient manner, as well as local and central government. The benefits are more widely distributed, and largely address many of the negative impacts of degraded water quality and insufficient environmental flows currently borne by society as a whole.

**Table 10: Costs and benefits of Policies 1, 2 and 3**

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| Central government | Local government | Agricultural sector | Tourism sector | Other industry | General public | Tangata whenua | Recreational users | | |
| | | | | | | | | **Economic** | |
| ✓ | | | | | | | | Implementation guidance (MfE, MAF, DoC) | |
| | ✓ | | | | | | | Identification of outstanding/degraded freshwater resources | |
| | ✓ | | | | | | | Amending planning provisions | |
| | ✓ | ✓ | | ✓ | | | | Implementation of waterway protection measures | |
| | | ✓ | | | | | | Potential loss of productive land | |
| ✓ | ✓ | ✓ | ✓ | ✓ | | | | | Maintenance and enhancement of clean green image |
| | ✓ | | | | | | | | Reduced treatment costs for drinking-water |
| | | ✓ | | ✓ | | | | | Increased investment certainty for land and water users |
| ✓ | | ✓ | | ✓ | | | | | Opportunities for investment in and development of mitigation technologies |
| | | | | | | | | **Social** | |
| | | | ✓ | | ✓ | ✓ | ✓ | | Increased contact recreation opportunities |
| | | | | | ✓ | | ✓ | | Improved angling and boating opportunities |
| ✓ | ✓ | | | ✓ | ✓ | | | Potential of increased cost of urban development and affordability issues | |
| | | ✓ | | ✓ | ✓ | | | Potential loss of employment from reduced economic activity | |

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| Central government | Local government | Agricultural sector | Tourism sector | Other industry | General public | Tangata whenua | Recreational users | | |
| | | | | | | | | **Environmental** | |
| | | | ✓ | | | ✓ | | | Improved bio-physical characteristics of fresh water |
| | | | | | | ✓ | | | Improved aquatic ecosystems |
| | | | | | | ✓ | | | Improvement to catchment and regional-scale ecosystems |
| | | | | | | | | **Cultural** | |
| | | | | | ✓ | ✓ | | | Improved recognition of Māori cultural values associated with fresh water |
| | | | | | ✓ | ✓ | | | Increased opportunities for the use of fresh waters as a food source (mahinga kai) |
| | | ✓ | | | ✓ | ✓ | ✓ | Potential requirement for people to change their existing cultural practices | |
| | | | | | ✓ | ✓ | | | Increased use and revival of matauranga Māori |
| | | | | | | ✓ | | | Increased connection to the land and waterways |
| ✓ | ✓ | | | | ✓ | ✓ | ✓ | | Part of meeting the responsibilities of kaitiaki |
| | | | | | ✓ | ✓ | | | Increased recognition of the value of fresh water to New Zealanders |

## 5.3.2 Policies 4 and 5

### Policy 4

When preparing a regional policy statement or variation or change to give effect to Policy 1 and when preparing a regional plan or variation or change to give effect to Policy 2, every regional council must consider the following:

(a) The Notable Values of each Freshwater Resource:

(b) The sensitivity of each Freshwater Resource and its Notable Values to adverse effects including effects of Land-use Development and the discharge of contaminants:

(c) The needs of primary and secondary industry and communities for sustainable fresh water supply:

(d) The contribution of existing and potential uses of Freshwater Resources and of existing economic investment to regional and national social, economic and cultural well-being:

(e) The importance of avoiding over-allocation of Freshwater for Consumptive Use:

(f) Tangata Whenua Values and Interests:

(g) Social and economic transition costs:

(h) The value of swimmability to the community.

### Policy 5

When preparing a district plan or variation or change to give effect to Policy 3, every territorial authority must consider the following:

(a) The importance of controlling Land-use Development in a way and at a rate that minimises the adverse effects on the quality and available quantity of Freshwater Resources:

(b) The importance of ensuring that the planning and implementation of Land-use Development applies industry good practice in order to –

  (i) Minimise the adverse effects on the quality and available quantity of Freshwater Resources; and

  (ii) Maximise efficiency in the use of Freshwater Resources:

(c) The importance of ensuring that the planning for and implementation of infrastructure for water supply, wastewater treatment and stormwater are undertaken –

  (i) In an integrated manner; and

  (ii) At a rate that, as a minimum, keeps pace with the rate of Land-use Development:

(d) Tangata Whenua Values and Interests:

(e) Social and economic transition costs.

Policies 4 and 5 specify matters that regional councils and territorial authorities must consider when giving effect to Policies 1−3. Many of these matters are the same, but some are specific to regional councils and some to territorial authorities. Given the cascading and overlapping nature of Policies 1−3 and the similarities between many of the matters contained in Policies 4 and 5, it is considered appropriate to evaluate them together. It will be specified where a particular aspect only applies to a regional council or territorial authority. In giving effect to Policies 1−3 there is also considerable overlap, so only the costs and benefits arising from Policies 4 and 5 that were not covered in the evaluation of Policies 1−3 will be discussed.

## a Evaluation

The key additional aspects here are a requirement to consider the sensitivity of freshwater resources in the assessment of notable values. This aspect would be incorporated into the earlier assessment undertaken in Policies 1−3, whereby regional councils are required to assess and characterise the freshwater resource in their region.

The needs of primary and secondary industry also need to be considered (Policy 4(c)), as does the contribution of the use of freshwater resources to economic, social and cultural well-being. Although it is difficult to determine the costs and benefits of this, this aspect would probably be incorporated into the determination of environmental flows and water levels; that is, social, economic and cultural matters would be considered through this mechanism.

On the other hand, avoiding the over-allocation of water is also listed as a matter for regional councils to have particular regard to. The main benefit of this will be to increase long-term certainty regarding the allocation of water for particular purposes. The specific costs and benefits will depend on how this policy is given effect, but one of the general benefits of this focus on the allocation of water is likely to be an increased awareness of the importance of fresh water to many aspects of our lives. This is likely to promote a change in thinking: from water being taken for granted to it being appropriately recognised and managed as a valuable resource. Along with this benefit, this policy (and the entire NPS) would be expected to encourage the involvement of a wider range of stakeholders in the management of fresh water, which can only be beneficial. Similarly, the increased involvement of tangata whenua is likely to be highly beneficial.

A key aspect of Policy 5, as distinct from Policy 4, is the focus on integrating land-use activities with the management of freshwater resources. The key emphasis of the policy is to ensure land-use development does not adversely affect water quality or quantity, and to ensure infrastructure for freshwater management keeps pace with land-use development. Again, the specific costs and benefits of this policy will vary considerably depending on how it is implemented. Broadly speaking, there is the potential for the policy to increase the cost of land development in terms of requiring higher standards of compliance for new and existing land-use activities. This could be through tighter controls on the effects of land use on water quality, and may involve things like improved sediment control, nutrient budgeting and riparian planting.

In terms of infrastructure, the cost of reducing the effects of land-use development will probably be passed on to land developers in the form of increased developer contributions. This could make some land unprofitable to develop, resulting in a cost in the form of a lost opportunity. This may also have flow-on implications for the affordability of housing, although the potential for this to occur is not considered high as developer contributions for the provision of services such as stormwater currently only make up a very small percentage of the overall cost of development. The general principle of this approach, as noted earlier, is that the cost is transferred from ratepayers to developers – a user-pays principle – so that rather than everyone

having to meet costs through rates, costs fall directly on those who generate the need for additional infrastructure. This in part ensures the actual costs are realised and attributed earlier. A further benefit from a water management perspective is that infrastructure is more likely to be provided when it is needed, which reduces the extra costs associated with retro-fitting when there is found to be insufficient capacity at a latter date, as has been typical in a number of communities around New Zealand.

The benefits of increased integration between land-use development and freshwater management are likely to be increased certainty and consistency regarding the planning requirements and costs for the provision of freshwater infrastructure for land-use development. The ultimate environmental benefit of closer integration will be improvements in the ecological and biophysical characteristics of freshwater resources. Stemming from this are numerous economic, social and cultural benefits, which have been discussed previously.

## b Summary

Table 11 provides a summary of the costs and benefits of Policies 4 and 5. Overall, it is considered that the policies would be effective at achieving many of the objectives, notably Objectives 1, 2, 3, 5, 8 and 9. It would also be relatively efficient, with the benefits outweighing the costs.

**Table 11: Costs and benefits of Policies 4 and 5**

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| Central government | Local government | Agricultural sector | Tourism sector | Other industry | General public | Tangata whenua | Recreational users | | |
| | | | | | | | | **Economic** | |
| | ✓ | ✓ | | ✓ | ✓ | | | | Increased efficiency of freshwater use |
| ✓ | ✓ | ✓ | | ✓ | | | | | Increased confidence in the security of future freshwater supply |
| | ✓ | ✓ | | ✓ | | | | | Increased certainty of allocation of fresh water for consumption |
| | | ✓ | | | ✓ | | | Potential requirement for people to change existing water practices | |
| | | ✓ | | ✓ | | | | Potential increased costs from additional compliance requirements | |
| | | ✓ | | ✓ | ✓ | | | Opportunity cost of loss of ability to develop land | |
| ✓ | ✓ | | | ✓ | ✓ | | | | Increased surety of provision of infrastructure to service land development |
| ✓ | ✓ | | | ✓ | ✓ | | | | Increased certainty of costs for infrastructure over the longer term |
| | | | | | | | | **Social** | |
| | ✓ | | | | ✓ | | | | Increased awareness of the importance of fresh water |
| | | | | | | | ✓ | | Increased regard to the recreational (including contact recreational / swimmability) values of fresh water and its management |
| | | | | | ✓ | | | | Improved openness and transparency regarding freshwater management |

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| **Central government** | **Local government** | **Agricultural sector** | **Tourism sector** | **Other industry** | **General public** | **Tangata whenua** | **Recreational users** | | |
| | | | | | | | | **Environmental** | |
| | | | ✓ | | | ✓ | ✓ | | Improvement of freshwater ecosystems |
| ✓ | | | | | ✓ | ✓ | | | Increased regard paid to the scientific, ecological and biodiversity values of fresh water and its management (notable values) |
| | ✓ | | | | ✓ | | | Diversion from other regional priorities (the opportunity cost of not pursuing something else) | |
| | ✓ | | | | | | | | Recognition of the priority for protecting outstanding freshwater resources |
| | | | | | | | | **Cultural** | |
| | | | | | ✓ | ✓ | | | Improved recognition of Māori cultural values associated with fresh water |
| ✓ | ✓ | | | | ✓ | ✓ | | | Improved Māori participation in decision-making processes |
| | | | | | ✓ | ✓ | | | Increased opportunities for use of fresh waters as a food source (mahinga kai) |
| | | ✓ | | | ✓ | ✓ | ✓ | Potential requirement for people to change existing cultural practices | |
| | | | | | ✓ | ✓ | | | Increased use and revival of matauranga Māori |
| | | | | | | ✓ | | | Increased connection to the land and waterways |
| ✓ | ✓ | | | | ✓ | ✓ | ✓ | | Part of meeting the responsibilities of kaitiaki |

### 5.3.3 Policy 6

Without limiting Policies 1 to 3, this National Policy Statement will be achieved also through the inclusion, unless inappropriate, of conditions on any relevant resource consents granted and recommendations on designations confirmed in respect of the following:

(a) Efficient Consumptive Use of fresh water (including where appropriate, the return of fresh water to Freshwater Resources):

(b) Protection against degradation of the quality of Freshwater Resources (including through the management of activities giving rise to stormwater discharges):

(c) Sustainable management of demands on fresh water in a manner which has regard to available supply of fresh water and adverse effects, both individual and cumulative:

(d) Integrated management of the effects of Land-use Development and discharges of contaminants on the quality and available quantity of Freshwater Resources:

to be achieved, as a minimum, by the use of industry good practice:

(e) Monitoring and reporting on matters relating to paragraphs (a) to (d).

Policy 6 provides for the proposed NPS to also be achieved through resource consent and designation conditions that require the use of industry good practice. The use of industry good practice is to ensure efficient consumption and protection against quality degradation of fresh water, sustainable management of demand, and integrated management of the effects of land-use development and discharges of contaminants on the quality and quantity of freshwater resources. Monitoring and reporting must be undertaken in relation to these matters, as required by conditions of consent.

#### a Evaluation

Policy 6 reiterates the objectives and Policies 1−3 of the proposed NPS. It is logical − and expected − that the objectives and policies of the proposed NPS would be implemented at a local level and at the resource consent stage of developments. The wider costs and benefits of Policies 1−3 have been discussed earlier.

The majority of the economic costs associated with this policy are expected to be incurred by the agriculture sector and industry. Those affected most will be those currently, and intending in the future, to engage in unsustainable practices. These conditions are likely to increase costs by requiring the implementation of measures that will improve practices, technology or infrastructure to meet industry good practice standards, and by requiring the use of remedial or mitigation measures.

For agriculture, in some cases this may result in decreased productivity of agricultural land, but this will be at varying scales depending on existing practices. For industrial activities, increased investment in infrastructure may be required to improve the quality of discharges from sites. This cost is likely to be a 'one-off' in most cases, although it may have an ongoing component.

As requiring authorities under the RMA, councils follow the designation process for many public works, and therefore will be subject to the conditions required to be imposed by Policy 6. Costs associated with the improvement of urban stormwater, for example, would be incurred by territorial authorities, and these costs ultimately covered by ratepayers. Methods to improve discharges could include improved discharge treatment, riparian planting, wetland restoration and public education programmes, as well as improved approaches to town planning and development, such as low-impact urban design.

It is difficult to determine the overall effects of this policy on the economy. There is the possibility that the costs of meeting good practice standards may result in a lower level of economic activity and therefore fewer employment opportunities in some sectors of the economy. However, there is also likely to be increased investment in the development of industry best practice techniques, mitigation measures, improved infrastructure/technologies and guidelines, all of which provide employment opportunities.

There is the possibility that good practice standards have not been already developed or decided on for each sector of industry that may affect water quality or quantity, and therefore the cost of developing these standards will also need to be borne by industry in conjunction with local government (and potentially central government). Research will also be required to ensure that tangata whenua values and interests are addressed within industry good practice guides, to provide advice on how best to implement objective 8 and other relevant policies.

These additional conditions may increase the cost of the resource consent process (including administration, condition monitoring and enforcement costs), and therefore costs to councils and to the applicants. This policy also requires monitoring and reporting on the matters addressed, the cost of which will be borne by consent holders.

Policy 6 also has positive implications, in that it provides a level of consistency for developers and users of fresh water, providing some certainty across all regions with regard to the consent conditions likely to be imposed. This will help developers and industry determine the feasibility of projects at an early stage.

The social implications of this policy are expected to be predominantly positive. Social benefits include an increased industry and public awareness of the importance of water, education and increased awareness of industry good practice standards. Policy 6 will also result in improved water quality and quantity for recreational users, the public health benefits of cleaner water, and amenity values for other users and the general public.

A possible social effect is the potential increased cost of urban development due to the increased costs of meeting good practice standards. This could result in land affordability issues for the general public as well as industry. However, the relative contribution of the NPS in this regard is expected to be so low that to attempt to measure it would be extremely difficult.

The environmental effects of this policy are positive. As discussed in the evaluation of Policies 1−3, implementing the proposed NPS at the resource consent stage by requiring the use of industry good practice will result in:

- improved water quality and quantity
- improvement of freshwater ecosystems
- more efficient consumption of fresh water
- improved ecological corridors through the provision of plantings along streams and rivers in agricultural areas.

However, there is also the possibility that some parties will avoid the consenting process altogether due to more stringent conditions of consent, which would result in what is likely to be localised adverse effects on the environment. It is considered the positive effects of the implementation of Policy 6 on the environment will far outweigh any foreseen adverse environmental effects.

## b Summary

Table 12 provides a summary of the costs and benefits associated with this policy. Overall, it is considered that the most significant economic cost will be associated with the implementation of measures that will improve practices, technology or infrastructure to meet industry good practice standards, and by requiring the use of remedial or mitigation measures. It is considered that the policy would be effective in achieving the objectives, particularly Objectives 2, 3, 4, 5, 6 and 7. The policy would also be relatively efficient, with the benefits outweighing the costs.

**Table 12: Costs and benefits of Policy 6**

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| Central government | Local government | Agricultural sector | Tourism sector | Other industry | General public | Tangata whenua | Recreational users | | |
| | | | | | | | | **Economic** | |
| ✓ | ✓ | ✓ | ✓ | ✓ | | | | Increased costs of infrastructure and mitigation measures in order to meet industry best practice standards | |
| ✓ | ✓ | ✓ | ?? | ✓ | | | | Costs of developing or deciding on best practice guidelines in each industry | |
| | | ✓ | ✓ | ✓ | ✓ | | | | Opportunities for investment in and development of industry best practice techniques, mitigation measures, improved infrastructure/technologies and guidelines |
| | ✓ | ✓ | ✓ | ✓ | | | | Potential increased consenting cost of new consents, and costs of reviewing existing consents | |
| | | ✓ | ✓ | ✓ | | | | Potentially reduced productivity/economic activity | |
| | ✓ | ✓ | ✓ | ✓ | | | | Increased monitoring and reporting costs | |
| | ✓ | ✓ | ✓ | ✓ | | | | Potentially increased enforcement costs | |
| | | ✓ | ✓ | ✓ | ✓ | | | The potential for reduced economic activity and therefore employment opportunities within some sectors | Employment opportunities relating to the development of industry good practice techniques, mitigation measures, improved infrastructure/technologies and guidelines |
| | | ✓ | ✓ | ✓ | | | | | More certainty (of feasibility) for developers/ users regarding resource consents |

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| **Central government** | **Local government** | **Agricultural sector** | **Tourism sector** | **Other industry** | **General public** | **Tangata whenua** | **Recreational users** | | |
| | | | | | | | | **Social** | |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Increased awareness of the importance of water |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Education and increased awareness of industry best practice |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Health benefits of improved fresh water |
| | | | ✓ | | ✓ | ✓ | ✓ | | Increased amenity values |
| | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Potential requirement for people to change existing cultural/social practices | |
| ✓ | ✓ | | | ✓ | ✓ | | | Potential of increased cost of urban development and affordability issues | |
| | | | | | | | ✓ | | Improved recreation opportunities |
| | | | | | | | | **Environmental** | |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Improved water quality and quantity through use of best practice |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Improvement of freshwater ecosystems |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Possibility that stringent standards may result in avoidance of the consenting process, and non-compliance with statutory documents | |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | More efficient consumption of fresh water |

### 5.3.4 Policy 7

In addition to giving effect to Policies 1 to 3 and Policy 6 by regulatory means, regional councils and territorial authorities may give effect to this National Policy Statement through non-regulatory methods (including financial contributions, development contributions under the Local Government Act 2002 and other methods).

Policy 7 provides for local authorities to give effect to the NPS through non-regulatory methods, including financial and development contributions under the Local Government Act 2002 and other methods. Other methods could potentially include:

- public awareness and education
- advocacy
- incentives or grants
- funding and support of care groups
- providing resources and support to schools
- technical or scientific support
- forming partnerships with key industries, tangata whenua and stakeholders.

This policy does not *require* action by local government, but provides more options which they *may* choose to implement as ways to give effect to the proposed NPS. As such, the benefits and costs discussed are potential rather than actual. It is also important to note that many local authorities have already implemented other methods that would help to give effect to the proposed NPS.

#### a Evaluation

Although the administration/process costs of implementing the proposed NPS through other, non-RMA means are likely to be less significant, some financial costs would still be incurred.

Undertaking any of the other methods above (such as school and care programmes, providing technical support, or forming partnerships) will result in financial costs, predominantly to district and regional councils. On the other hand, this funding and support from councils would reduce costs to industries, school and other groups on the receiving end. There is also an opportunity for local businesses or industry groups to provide funding and support to care or school groups, which would be beneficial to both parties: the school/care groups receive funding, and the business/industry groups have an opportunity for marketing and positive advertising in their local community.

Development or financial contributions could potentially be used to help fund community infrastructure, such as new or upgraded stormwater systems.

The costs to council resulting from any development/financial contributions would be those associated with the upfront costs of developing the policy, administering the policy and developing the infrastructure, as well as bearing the associated risk of potentially not recouping the full cost of the infrastructure (including any associated loan costs). The benefits to councils would be the provision of infrastructure that helps give effect to the NPS, and having a mechanism in place to fund the infrastructure through those persons who require it to be in place (rather than the general ratepayer bearing the cost).

The potential cost to developers and industry of financial/development contribution policies will be the upfront cost of the contribution, but with this potentially having a flow-on effect on the local economy, land affordability and employment. It will be beneficial to the developer to pay only a share of the cost based on the demand their development will have on the infrastructure, rather than it being a requirement on the first developer to pay the total costs. However, clearly many of these assumptions will vary from council to council, so this assessment can only be relatively generic.

These other methods, particularly the funding and support of school and care groups, will raise awareness of the importance of fresh water and educate groups on how to care for these ecosystems. These methods are likely to reach a wider range of people, and funding and support of care groups encourages local interest and actions in freshwater management. This will be beneficial long term as communities gain a vested interest and a sense of ownership of local freshwater environments. Care groups and school groups aimed at improving the freshwater ecosystem would be expected to positively contribute to the amenity values of the local environment, particularly through riparian plantings, fencing, signage and walkways. Having cleaner freshwater systems also improves opportunities for the use of fresh water as a food source (mahinga kai).

A social cost of implementing other methods may be industry and public opposition to increases in development/financial contributions. Increased contributions are likely to raise the cost of urban development, such as residential subdivisions, and therefore result in land affordability issues, which is currently a significant issue for New Zealanders. However, as with any development contribution, this policy simply attempts to identify the 'real' costs of development.

The use of other methods to give effect to the proposed NPS will positively contribute to improved water quality and quantity, and an overall improved freshwater environment and surrounds.

## b Summary

Table 13 provides a summary of the costs and benefits associated with this policy. Overall, it is considered that the policy would be effective at achieving many of the objectives, notably Objectives 1, 2, 3, 5, 6 and 7. It would also be relatively efficient, with the benefits outweighing the costs.

**Table 13: Costs and benefits of Policy 7**

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| Central government | Local government | Agricultural sector | Tourism sector | Other industry | General public | Tangata whenua | Recreational users | | |
| | | | | | | | | **Economic** | |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Costs of other methods (alteration of planning provisions and actual costs, eg, fencing, riparian planting, education programmes, development contribution policy) | |
| | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Use of other methods, such as care programmes, may provide sponsorship and advertising opportunities |
| | | ✓ | ✓ | ✓ | | | | | Reduced costs to those receiving funding and/or support |
| | | | | | ✓ | | | | Reduced costs to ratepayers subsidising development |
| | ✓ | ✓ | ✓ | ✓ | ✓ | | | Possibility of increased financial or development contributions for some developments | |
| | | ✓ | ✓ | ✓ | ✓ | | | Flow-on economic/employment effects of increased financial/development contributions | |

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| **Central government** | **Local government** | **Agricultural sector** | **Tourism sector** | **Other industry** | **General public** | **Tangata whenua** | **Recreational users** | | |
| | | | | | | | | **Social** | |
| | ✓ | | ✓ | | ✓ | ✓ | ✓ | | Education and increased awareness of the importance of water |
| | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Other methods may encourage local interest and actions towards freshwater management |
| | | | ✓ | | ✓ | ✓ | ✓ | | Increased amenity values |
| | | | | | | | ✓ | | Improved recreation opportunities |
| | | | | | | ✓ | | | Increased opportunities for use of fresh water as a food source (mahinga kai) |
| ✓ | ✓ | | | ✓ | ✓ | | | The potential for increased cost of urban development and flow-on affordability issues for housing | |
| | ✓ | ✓ | ✓ | ✓ | ✓ | | | Possibility of public opposition to increases in development/financial contributions | |
| | | | | | | | | **Environmental** | |
| | | | ✓ | | ✓ | ✓ | ✓ | | Improved water quality and quantity |
| | | | ✓ | | ✓ | ✓ | ✓ | | Improved freshwater environment and surrounds |

### 5.3.5 Policy 8

All local authorities will make publicly available (including electronically) a record of the process used to identify the Tangata Whenua Values and Interests in Freshwater Resources of the region as required to give effect to Policy 1(e), including the identification of the relevant iwi and hapū.

All local authorities will assist the Minister for the Environment by making publicly available (including electronically) an up-to-date register of the regulatory and non-regulatory methods to give this National Policy Statement full effect.

Policy 8 requires the provision of certain information. This falls into two parts: 1) information on how tangata whenua values and interests were identified; and 2) information on the methods used to implement the NPS. The provision of information is important to all decision-makers at all levels of government to determine the effectiveness of their policies – including, at a national level, the effectiveness of this NPS.

#### a Evaluation

In relation to the first part, there are a number of costs and benefits identified as part of the evaluation.

**Economic costs and benefits**

There will be costs involved in ensuring the information collected is appropriate for public release, and is correct and relevant for its purpose. The information will have to be collected from Māori initially, and intellectual property issues should be dealt with appropriately. Again it will be important to make it clear that tangata whenua values, while having many consistencies across iwi and hapū boundaries, are not always the same across the country. Analyses will have to be commissioned to ensure these issues are addressed before the information is put into the public arena.

**Environmental costs and benefits**

These are consistent with kaitiakitanga.

**Cultural costs and benefits**

There may be some cultural costs in making this information publicly available. However, this work may also help retain matauranga Māori for future generations, and in institutionalise Māori values and interests in regional documents. As long as there is adequate engagement with Māori on this issue, costs can be reduced over time.

**Social costs and benefits**

Water quality, from a Māori world view, is intimately connected to a person's well-being, as demonstrated by the whakatauki of the Whanganui people: "Ko au te Awa, Ko te Awa ko au" (I am the river and the river is me). When the waters are sick, so too are the people. With improved water quality it is perceived that the people will also be healthier, contributing to social wealth.

When it comes to the provision of information generally, this has a number of benefits in relation to sharing information on regulatory and non-regulatory methods, including the:

- sharing of information on the success of methods
- transparency of resource management policy
- ability for various stakeholders to get actively involved in achieving resource management outcomes, especially through non-regulatory means.

In general terms, it is considered that there is already a high level of information sharing between councils and central government, but formalising an information-sharing requirement and reporting will likely focus greater attention on the success of the NPS.

**Table 14: Costs and benefits of Policy 8**

| Stakeholder | | | | | | | | Costs | Benefits |
|---|---|---|---|---|---|---|---|---|---|
| Central government | Local government | Agricultural sector | Tourism sector | Other industry | General public | Tangata whenua | Recreational users | | |
| | | | | | | | | **Economic** | |
| ✓ | ✓ | | | | ✓ | ✓ | | | Experience of regulation shared, and regulation improved over time at district and regional level |
| | | ✓ | ✓ | ✓ | | | | Negative results could influence investment in certain regions | |
| | | | | | | | | | |
| | | | | | | | | **Social** | |
| ✓ | ✓ | | | | ✓ | | | | Greater community involvement in resource management |
| ✓ | ✓ | | | | ✓ | ✓ | ✓ | | Greater transparency to the community in terms of the success of water management programmes |
| | | | | | | | ✓ | Negative results may have an impact on recreational values (eg, by excluding some areas from use for various reasons) | |
| | | | | | | | | **Environmental** | |
| ✓ | ✓ | | | ✓ | ✓ | | | Comparing results region by region may not be scientifically robust or fair | |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Improved environmental results from sharing examples of successful regulation and non-regulatory methods |
| | | | | | | | | **Cultural** | |
| ✓ | ✓ | | | | | ✓ | | Some iwi or hapū groups may not wish to have information on the Treaty relationship between local government and iwi made public | |
| ✓ | ✓ | | | | | ✓ | | | Greater tangata whenua involvement in decision-making |
| ✓ | ✓ | | | | | ✓ | | | Tangata whenua input to decision-making will be more measurable |

### 5.3.6 Policy 9

The Minister for the Environment will seek an independent review of the implementation and effectiveness of this National Policy Statement at achieving all the objectives and policies of the National Policy Statement no later than 10 years after it comes into force and shall then consider the need to review, change or revoke this statement. Collection of data to inform this review will begin at least two years prior to the review.

Policy 9 requires the Minister to seek an independent review of the effectiveness of the NPS within 10 years of its enactment. This will introduce a greater level of accountability regarding the costs and benefits of freshwater management for all New Zealanders. The direct economic cost of this review will be borne by central government, and is estimated to be in the order of $0.9 million.

It is considered that the policy would be effective in achieving Objective 9, and would also be efficient, with a total cost of $0.9 million.

Māori will want a key role in the monitoring of the NPS to assess its effectiveness from a tangata whenua perspective.

## 5.4 Summary

In summary, it is considered that the NPS as proposed meets the tests required by section 32. Specifically, this evaluation concludes that the objectives meet the purpose of the Act, namely sections 5(a), (b) and (c). Therefore, it is considered that the requirements of section 32(3)(a) are met. In addition, each of the policies achieves one or more of the objectives, and the benefits outweigh the costs, while the risks appear to be manageable. Therefore, it is considered that the requirements of section 32(3)(b) are met. The following tables provide a summary of these two requirements.

**Table 15: Do the objectives achieve the purpose of the Act?**

| Objective | | Achieving the purpose of the Act (section number) | | |
|---|---|---|---|---|
| | | 5(a) | 5(b) | 5(c) |
| 1 | Enabling well-being of people and communities | ✓ | ✓ | ✓ |
| 2 | Ensuring integrated management of the effects of fresh water | ✓ | ✓ | ✓ |
| 3 | Improving the quality of fresh water | ✓ | ✓ | ✓ |
| 4 | Recognising and protecting life-supporting capacity and ecological values | ✓ | ✓ | ✓ |
| 5 | Addressing freshwater degradation | ✓ | ✓ | ✓ |
| 6 | Managing demand for fresh water | ✓ | ✓ | ✓ |
| 7 | Efficient use of fresh water | ✓ | ✓ | ✓ |
| 8 | Iwi and hapū roles and tangata whenua values and interests | ✓ | ✓ | ✓ |
| 9 | Ensuring effective monitoring and reporting | ✓ | ✓ | ✓ |

**Table 16: Are the policies the most appropriate way to achieve the objectives?**

| Policy | | Objective | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | Policies on regional policy statements | – | ✓ | ✓ | ✓ | ✓ | – | – | – | – |
| 2 and 3 | Policies on regional and district plans | – | ✓ | ✓ | ✓ | ✓ | – | – | – | – |
| 4 and 5 | Policies on the preparation of policy statements and plans | ✓ | ✓ | ✓ | | ✓ | – | – | ✓ | ✓ |
| 6 | Policy on certain consents and designations | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | – | – |
| 7 | Policy on non-regulatory methods | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | – | – |
| 8 | Policy on information concerning iwi and hapū registers and other matters | ✓ | – | – | – | – | ✓ | – | ✓ | – |
| 9 | Review of this NPS | – | – | – | – | – | – | – | – | ✓ |

# 5.5 Quantifiable costs and benefits

The high level and national focus of the NPS makes the quantification of costs and benefits in dollar terms extremely difficult. However, for the purpose of providing a context, this has been attempted. Appendix A provides a more detailed breakdown of these costs and, most importantly, a series of assumptions as to how these costs were derived. It is expected that these costs can and will be refined further as the proposed NPS is presented to local government and other stakeholders.

It is concluded that the NPS is likely to cost central and local government up to $100 million in the 25-year period to 2035 (see Appendix A). A summary of the impacts on the primary sector is included in Appendix B, but quantification is difficult at this stage as it relies on the specific regulatory actions from (primarily) regional councils.

In addition to quantifying the dollar costs to local and regional government, it is possible to provide a context for these costs by quantifying the benefits to the country in general terms. Throughout the evaluation, a range of benefits have been identified, such as the value of New Zealand's clean green image and the cost of water treatment. While these benefits are much more difficult to quantify, Appendix B does attempt to provide some context to the real value of water. Overall, it is considered that the benefits of the NPS outweigh the costs, and that the NPS is the most appropriate means to achieve the purpose of the RMA.

# 5.6 Risks and uncertainties

The final element of the analysis is an examination of the risks, uncertainties and assumptions associated with each of the policies. Section 32(4)(b) of the RMA requires an evaluation to take into account:

> *... the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies ...*

There is some uncertainty around aspects of the some of the policies, in particular matters such as climate change. However, in terms of existing environmental trends, there is a great deal of certainty in relation to the need to reverse trends of degrading water quality, over-allocation and conflicts over water uses and demand, and for the establishment of environmental flows.

The risks of acting versus not acting are typically difficult to predict. However, it is clear that the risk of not-acting will likely mean:

- further ongoing costs associated with improving the regulatory regime to address water quality under the enhanced status quo scenario − these costs have not been identified in this section 32 in detail, but are likely to be significant, and will be incurred whether or not this NPS is notified
- further degradation of water quality, largely as a result of further intensification of land uses – both urban and rural − and poorly controlled discharges (largely non-point-source discharges)
- a lack of action to improve water quality across the board, and therefore a loss of opportunities associated with clean water
- a lack of a co-ordinated and integrated approach between freshwater management and land management
- increased demand and conflict over water use and allocation
- decreased ecological function and a loss of important values as a result of water flows and levels falling too low, perhaps in part due to the impacts of climate change.

Although this evaluation of the NPS does demonstrate that acting at a national level is the right course to take, there are a number of potential risks. These include:

- whether the timeframes specified in the NPS are appropriate given the significance of the resource management issues
- whether the NPS creates a level of additional work for regional and district councils for which insufficient resources are available to deliver on the NPS requirements in time
- whether a few or many regional and district councils interpret their own plans relative to the NPS as being satisfactory, and therefore little change will occur at the local/regional level.

### 5.6.1 Other risks and constraints

There are a number of timeframe-related constraints with the NPS. The NPS largely focuses on policies that are implemented through regional and district council plans. Although this is the best approach, there are constraints that over the period taken to translate the NPS into various regional and district plans a great deal of time will be lost. Furthermore, although the policies include specific timelines, there are risks that the timeframes are too long given the significance of this issue.

Timeframes identified in the policies are as follows.

- Policy 1(a)–(j) requires that by the second anniversary of the date of commencement of the NPS all regional policy statements must contain provisions to determine and set timetable priorities for regional plans in a number of relevant matters, specifically water quality standards and low flow provisions, along with a wide range of other matters. Although a significant amount of work is required by Policy 1, this timeframe would appear to be realistic given the timeframes needed to prepare objectives, policies and methods, and the statutory timeframes associated with implementation.
- Policy 2(a) provides the opportunity for regional councils to notify a regional plan dealing with Policy 1 (a), (b) and (c) matters. Policy 2(b) then requires other matters to be notified in a regional plan within 40 working days of the regional policy statement becoming operative. This suggests that the matters in Policy 1(d)−(j) are more critical, as a specific timeframe is set, whereas Policy 1(a)−(c) leaves discretion to regional councils as to the timeframe.
- Policy 3 requires that territorial local authorities notify a district plan change within 40 working days of the regional policy statement becoming operative. The district plan change may occur in advance of some of the regional plan provisions (specifically those relating to Policy 1(a)−(c)), and would be concurrent with regional plan provisions for Policy 1(d)−(j). This creates some risk that there will be a lack of integrated policy development (ie, the district and regional plans could be incompatible, or could have gaps). Again, this is a large volume of work, and although some councils may be well underway there is a risk that the work cannot be completed in time. This is again an area where it would be appropriate for the Ministry to assist in providing information and guidance.
- Policies 4 and 5 take immediate effect, as no timeframe is specified, but in practice they relate to the preparation of policy documents or plans in any case. Whether these policies provide sufficient guidance to alleviate the risks identified in the point above remains to be seen. The risk is considered low if local and regional governments have an open relationship for their policy development.
- Policy 6 takes immediate effect. The constraints are considered to be reasonably low.
- Policy 7 takes immediate effect, and the constraints are considered to be low overall, although greater direction could be provided to councils on non-regulatory methods to use.
- Policy 8 takes immediate effect, although it is linked to Policy 1(e), which is to be effected by the second anniversary of the date of commencement of the NPS. Policy 1(e) requires a large volume of work, but because this policy is referring to processes rather than data or information collection, it is considered to be achievable and therefore low risk.
- Policy 9 requires a review of the NPS no later than 10 years after it comes into force. This is a realistic timeframe, and is required by the Act in general terms of policy review in any event.

### 5.6.2 Resourcing constraints

A further constraint for the implementation of NPS arises from 'resourcing'. The NPS will create a large amount of additional investigative, monitoring and policy development work for councils. Although an approximate estimate of these costs is provided in Appendix A, one key risk to delivering on the NPS is a lack of 'professional' resources at regional and district councils. If additional resources are not available (due to labour supply), some tasks may not be completed within the timeframes stipulated. A further possibility is that the NPS will result in resources being diverted from other programmes by regional and district councils. However, it is important to bear in mind that some of these costs might ultimately arise even without an NPS in effect.

### 5.6.3 Lack of local or regional action

Finally, given the heavy reliance on regional policy statements and plans and district plans as an implementation measure, it is possible that despite the various trends in environmental quality identified in this and many other reports, some councils may argue that their plans already meet the requirements of the NPS, and therefore no further change is necessary. Councils, and stakeholders, may have differing views about how best to implement the NPS.

# 6 Conclusions

The purpose of this report is to provide an evaluation of the proposed National Policy Statement for Freshwater Management in accordance with section 32 of the RMA. This NPS has the potential to affect every district and regional plan, and ultimately a number of stakeholders and water users. The NPS provides high-level direction on what the Government and the Minister want to achieve with respect to freshwater outcomes. A key test is whether, on balance, the NPS will deliver a range of benefits to all New Zealanders that outweigh the costs associated with a 'tougher' policy framework.

The NPS identifies three significant resource management issues:

- increasing demands on freshwater resources
- reduced or declining water quality
- uncertainties over the impacts of climate change on freshwater systems.

In terms of addressing these issues, the first key conclusion is that the existing framework of district and regional plans and regional policy statements is not delivering the desired environmental results. This status quo framework may improve over time, and some regions will continue to be ahead of others in terms of their policy framework and approach to implementation. However, even with an evolution in regional and district plans, there remains a significant risk to the sustainable management of freshwater resources, and therefore further national direction is needed to address the issues identified above.

The NPS includes nine objectives and nine policies to address the resource management issues. A review of the objectives concludes that the nine objectives proposed are the most appropriate way to achieve the purpose of the Act. Furthermore, the objectives help the Government achieve the outcomes set out in the Sustainable Water Programme of Action. This is not to say that further refinement of the objectives is not possible through the public Board of Inquiry process, but for the purpose of notification of the NPS, the intent of the objectives is clear, and they will provide national guidance for decision-makers and those councils preparing regional and district plans. In this sense, the section 32 review process is not yet complete, but this report marks the completion of the process to date.

The high-level nature of the NPS makes quantification of costs and benefits in real dollar terms unfeasible. This report has identified a range of costs and benefits, which are summarised in the following table relative to the social, economic and environmental and cultural outcomes.

**Table 17: Overall summary of costs and benefits**

| **Environmental costs** | **Environmental benefits** |
|---|---|
| Diversion from other regional priorities (opportunity cost of not pursuing something else) | Less environmental damage<br>Healthier in-stream ecology<br>Less risk in setting environmental flows, as these can be reviewed regularly<br>Greater water efficiency, and more water available for environmental flows<br>Delayed need for the construction of major water projects due to more efficient use<br>Ecological values protected |
| **Social costs** | **Social benefits** |
| Increased cost of urban development (leading to affordability issues)<br>Loss of employment where access to water is reduced<br>Loss of regional discretion to have a lower standard | New Zealand's clean green image is maintained<br>Recreational opportunities are maintained or improved<br>Greater direction to communities<br>All rivers in New Zealand are swimmable<br>The community is engaged<br>More employment in the recreation and tourism sectors<br>Certainty to the community, particularly in terms of protection for freshwater values<br>Greater awareness of water as a finite resource |
| **Cultural costs** | **Cultural benefits** |
| Loss of rangatiratanga (Māori feel lack of control)<br>Requires people to change existing cultural practices<br>Possible lack of emphasis on fishable water quality for customary fisheries | Enhancement of kaitiakitanga − protecting the environment<br>Maintain ability for cultural and customary uses of water and of customary fisheries<br>Cultural values recognised<br>Recognition of a wider range of the cultural importance all New Zealanders place on fresh water |
| **Economic costs** | **Economic benefits** |
| Increased regulatory costs to local and central government<br>Additional long-term planning costs to councils<br>Increased compliance costs to all consent holders<br>Direct economic costs imposed on production<br>Reduced flexibility in land management<br>Increased production costs in some locations<br>Restricted land-use opportunity for development<br>Loss of ability to trade off different uses of land and water<br>Increased costs of monitoring and review<br>Loss of potential investment in land development<br>Imposed costs to council to consult with the community<br>Impact on existing land uses in terms of longer-term certainty<br>More costs to permit holders and regulators<br>Potential for greater water charges for consumers (internalising externalities)<br>Cost to regulators to have environmental flows in place<br>Could involve stricter environmental flows in places where the focus has been on ecological flows only | New Zealand has a more marketable product on the world stage<br>Increased tourism<br>Reduced cost of water treatment<br>Reduced environmental remediation costs<br>Improved aquaculture and marine quality<br>Opportunity for advancement of technological mitigation technologies<br>Reduced regulatory costs for setting water quality standards<br>More efficient planning for infrastructure<br>Increased certainty of costs<br>Ease of consenting projects that are aligned with the regional policy statements<br>Stopping projects that are inconsistent with regional policy statements<br>Greater resilience to climate change<br>Improved certainty for economic users, because the NPS clearly specifies the available allocation<br>Enables resource consent applications to be processed in a straightforward manner (provides clear guidance to the resource consent decision-making process) |

Overall, the evaluation concludes that the NPS will provide, on balance, significant benefits to New Zealand's freshwater resources, and by implication, to New Zealanders. Some stakeholders will undoubtedly carry a greater proportion of the costs associated with the NPS than others. These stakeholders will initially be regional and district councils. These costs are identified in this NPS, and in the context of the overall benefits are considered to be acceptable.

Other stakeholders disadvantaged are those who are contributing to the problems associated with degraded water quality and over-allocation. While each case will be taken on its merits, the principles of internalising costs, or in some instances 'polluter pays', is a well accepted part of resource management in New Zealand.

The key issue will be the timeframe over which these costs are attributed or incurred. The NPS does identify timeframes for specific planning activity (which apply to district and regional councils, monitoring, and ultimately to achieving water quality objectives by 2035. While many New Zealanders would perhaps prefer to see this target date brought forward, a 25-plus year programme to improve water quality, allocation and flows appears to be pragmatic and practical. The NPS of course does not discount the possibility that some communities will want to take more action sooner.

Given the evaluation presented in this report, it is concluded that the NPS meets the tests of section 32 of the Act, and, furthermore, will promote the sustainable management of natural and physical resources.

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# Glossary

| | |
|---|---|
| **All-of-government submission** | A submission to a local authority (most likely on a resource consent or notice of requirement) jointly by two or more government departments that sets out the Government's views on the matter (also known as a Crown submission). |
| **Call-in** | The Minister for the Environment may 'call-in' a nationally significant matter (most likely a resource consent or notice of requirement) under section 141 of the RMA, from the local authority that would normally have determined it, and instead ask a board of inquiry or the Environment Court to determine it. |
| **Designation** | An authorisation included in a district plan that allows a requiring authority to undertake a public work or network utility project without a land-use consent. |
| **District plan** | A plan prepared under Part 5 of the RMA to control the use of land within the district or unitary authority. |
| **Fresh water** | All water except coastal water and geothermal water. |
| **Hapū** | Clan; tribe; subtribe − section of a large tribe. |
| **Iwi** | Tribe; nation; people; race. |
| **Kaitiakitanga** | The exercise of guardianship by the tangata whenua of an area in accordance with tikanga Māori in relation to natural and physical resources; includes the ethic of stewardship. |
| **Mahinga kai** | Garden; cultivation; food source. |
| **Mauri** | Life force; life principle; special nature. |
| **Matauranga Māori** | Traditional Māori knowledge and wisdom. |
| **Mihi** | Speech of greeting; acknowledgement. |
| **Minister** | The Minister for the Environment, unless otherwise specified. |
| **Ministry** | The Ministry for the Environment, unless otherwise specified. |
| **Nationally significant** | A level of importance assessed as being significant on a national scale, having regard to the criteria listed in section 45(2) of the RMA. |
| **NES** | National environmental standard − a tool used to set nationwide standards for the state or use of resources. A national environmental standard is issued under section 43 of the RMA. |
| **Notice of requirement** | A notice given to a territorial authority by a requiring authority for its requirement for a designation to be included in the district plan. |
| **NPS** | National policy statement − national policy guidance for environmental matters that are considered to be of national significance (eg, the coastal environment). A national policy statement is issued under section 52 of the RMA. |
| **Objective** | An outcome being sought to resolve a significant resource management issue. |
| **Part 2** | Part 2 of the RMA sets out the purpose of the RMA (section 5) and other principles (sections 6, 7 and 8). |
| **Pepeha** | Tribal saying; proverb. |
| **Policy** | A general course of action taken to achieve an objective, identified in district and regional plans or regional policy statements. |
| **Rangatiratanga** | Sovereignty; chieftainship. |

| | |
|---|---|
| **Requiring authority** | A Minister of the Crown, a local authority or a network utility operator approved as a requiring authority by the Minister for the Environment under section 167 of the RMA. |
| **Resource consent** | An authorisation to use a natural or physical resource, issued under Part 6 of the RMA. |
| **RMA** | The Resource Management Act 1991 and its amendments. See: www.legislation.govt.nz/ |
| **Rule** | A regulation in a plan to prohibit, control or allow activities to manage the use, development and protection of natural and physical resources in accordance with the purpose of the RMA. |
| **Section 32** | The section of the RMA that requires any person developing a policy or regulatory instrument under the RMA to carry out an evaluation of the appropriateness, alternatives, costs and benefits of what is proposed. |
| **Submission** | The written comments, opinions, concerns in support of or in opposition to a proposed development or a proposed policy statement or plan. |
| **Tangata whenua** | The iwi, or hapū, that holds mana whenua over a particular area. For the purpose of this guidance document, the term tangata whenua has been used to apply to both singular tangata whenua groups and multiple tangata whenua groups. |
| **Taonga** | Treasure; possession; property. |
| **Wairua** | Spirit; soul. |
| **Water conservation order** | An order made under section 214 of the RMA that places restrictions and prohibitions on the exercise of a regional council's management of the water body to which the order applies. |
| **Whakatauki** | Proverb; saying. |
| **Whanau** | Extended family; family group. |

# Appendix A: Estimate of Costs to Central and Local Government

## Introduction

This appendix is intended to give only order-of-magnitude estimates of the costs to central and local government of implementing the policies under the proposed NPS. It is emphasised that:

- these cost estimates only cover implementation costs − there will be additional costs for central and local government as a consequence of the NPS (eg, more expensive water supply costs, additional catchment protection costs)
- no account has been taken of implementation or other costs for non-government parties (eg, the full costs of hearings, once non-government costs are taken into account, are likely to be a multiple of government costs).

In the estimates below the cost of employing a full-time equivalent staff member has been assumed to be $150,000 per annum. This includes salary and staff overheads, including equipment costs. This may seem high, but since much of the costs estimated below are for initial costs over only a one- to two-year period, rather than ongoing costs, this reflects the likelihood that consultants will be engaged for a number of tasks.

## Central government

The costs associated with the development of the proposed NPS are not included, because these will largely be incurred whether or not the NPS is eventually implemented or not.

The implementation of Policies 1–3 would require some form of central government support for local government in the form of planning guidance notes, estimated to cost $250,000.

It is not considered that Policies 4−8 will result in any costs to central government that have not already been included in the assessment of Policies 1−3.

Policy 9 involves an independent review of the NPS, and this cost is estimated at $2 million at year 10 and then repeated 10 years later. This has a present value of $0.9 million, assuming a discount rate of 10 per cent and a 25-year life.

This gives a total estimated cost (ie, initial plus ongoing costs) in present value terms of $1.15 million for central government's implementation of the policies under the proposed NPS.

# Local government

The costs for local government derive primarily from Policies 1−3 and from Policy 8.

## Policies 1–3

### Identification of freshwater resources as outstanding and degraded

2 x FTEs per regional council = 2 x 16 (councils) x $150,000 = $4.8 million

### Alteration of planning provisions to give effect to the NPS

1 x FTE per regional council + 2 hearings at $50,000 each[8] = ($150,000 + $100,000) x 16 = $4 million

0.5 x FTE per territorial authority + 1 hearing at $50,000 = ($75,000 + $50,000) x 81 = $10.1 million

### Increased levels of reporting and monitoring

1 x FTE per regional council = $150,000 x 16 = $2.4 million per annum ($21.8 million present day value)

0.25 x FTE per territorial authority = 0.25 x $150,000 x 81 = $3 million ($27.2 million present day value)

## Policy 8

### Iwi and hapū registers and consultation

Initial cost of $150,000 per regional council and territorial authority + $20,000 per annum ongoing

$150,000 x 97 = $14.6 million

$20,000 per annum per local authority = $17.6 million (present day value)

Total cost in present day value = $14.6 million + $17.6 million = $32.2 million

[8] One hearing for regional policy statement changes, followed by a hearing to amend regional plans. One hearing is assumed for all regional plans in each region.

**Table A1: Summary of central and local government costs**

| | Central government | Regional councils | Territorial authorities |
|---|---|---|---|
| Planning guidance | $0.25 million | | |
| Identification of freshwater resources | | $4.8 million | |
| Revision of planning provisions | | $4.0 million | $10.1 million |
| Monitoring and reporting | | $21.8 million a | $27.2 million b |
| Iwi and hapū registers and consultation | | $5.3 million | $26.9 million |
| NPS review | $0.9 million c | | |
| Total | $1.15 million | $35.9 million | $64.2 million |

a Present value terms; per annum the cost is $2.4 million.

b Present value terms; per annum the cost is $3 million.

c The present value of two reviews at $2 million each after 10 years and again after 20 years.

This gives a total cost to central and local government of $101.25 million.

# Appendix B: Available Quantitative Data Relevant to Potential Economic Benefits

## Introduction

Various reports have been reviewed to obtain data relevant to the potential economic benefits of the proposed NPS. Unfortunately, the uncertainties about the extent to which the proposed NPS will affect the various measures of economic benefit, and the various measures of economic benefit themselves, are subject to margins of error. The data does, however, provide some context within which to consider the additional 'regulatory process' costs that have been estimated in Appendix A.

## Economic value of fresh water

A study by the Institute of Geological & Nuclear Sciences (White et al, 2004) provides estimates for the economic value of surface water and groundwater in various uses. The report itself concedes that the estimates are likely to have a high margin of error due to data limitations. Combining the estimates for the 100 surface water catchments of largest value and the 100 groundwater aquifers of largest value gives the following estimates for economic value:

- domestic use: $499 million per annum
- stock use:[9] $9 million per annum
- industrial use: $34,215 million per annum.

This excludes an estimate for the economic value of water used for irrigation. However, a study by Harris and Skilton (2007) provides estimates for the allocative efficiency gains from the proposed National Environmental Standard for Water Measuring Devices. This report concludes that the present value, at a 10 per cent discount rate, for improved allocative efficiency arising from a 2.5 per cent increase in consumptive water take for irrigation in highly allocated regions is $31.8 million. This implies the economic value of water used for irrigation in these regions is around $1,270 million in present value terms, or $127 million per annum.[10]

This gives an estimate for total economic value for water used of $34,850 million per year,[11] dominated by the economic value of water in industrial use. This excludes any economic value for water used in electricity generation (because the water is not 'consumed' or 'taken'), or the economic value for 'passive' or 'in-stream' uses. It is expected that the NPS will have an impact on the quality and allocation available of fresh water for all these uses.

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[9] In the case of stock use, the economic value is in relation to only 20 catchments of largest value.

[10] In approximate terms, the uniform annual amount over 50 years at a 10% discount rate = 1270/10.

[11] $499 million + $9 million + $34,215 million + $127 million.

Presumably such estimates could be used in conjunction with assumptions about the extent to which the proposed NPS leads to more efficient use of water. For example, supposing it could be claimed that the proposed NPS would lead to a 1 per cent increase in the availability of water, without increasing costs of supply, as compared to the without NPS scenario. This means there would be an economic benefit to New Zealand of $389 million per annum. On the basis of the way in which the economic values of water use have been estimated, this economic benefit can be considered in terms of increased profits from additional production and/or saving in the costs of water supply. It should also be noted that in the future we can expect economic values to rise as greater demands are placed on New Zealand's finite freshwater resources.

# The economic value of New Zealand's clean green image

A study by PA Consultants (2001) estimated the economic value to New Zealand's dairy and tourism industries from its clean green image. With respect to the dairy industry, it was estimated that returns would decline by between $241 million per annum (if all of the lost export sales are redirected to less profitable markets and commodities) and $569 million per annum (if none of the lost export sales are redirected to less profitable markets and commodities) if New Zealand's environment was perceived by consumers in overseas markets as being degraded.

With respect to the tourism industry, under a scenario of worsened environmental perceptions and international tourists' purchasing behaviour changing by reducing their length of stay in New Zealand, the economic cost to New Zealand was estimated at between $530 million and $938 million per annum, depending on whether lost wages and GST effects are taken into account. This covered tourists from New Zealand's five major markets at that time (Australia, Japan, Korea, the United Kingdom and the United States of America).

On the basis of these research results, and having regard to:

- other export products, whose sales would be affected by perceptions about New Zealand's environment
- growth in volumes since 2000
- inflation and real price increases for sales since 2000
- a greater awareness and responsiveness to environmental concerns now as compared to 2000.

$1,000 million per annum might be a conservative approximate estimate for the current (2008) economic value of New Zealand's clean green image. Again it would seem reasonable to assume that this value will rise with the passage of time.

# Health benefits of improved freshwater quality

A 2006 study (Cowie and Nokes, 2006) estimated that water-borne diseases cost New Zealand $25 million per annum, while another study (Ministry for the Environment, 2007a) gives two overseas examples of one-off disease outbreaks having economic costs of $140 million and $205 million.

# Other studies

The various reports available concerning the Waitaki catchment water allocation appear to give measures of economic benefits and costs that are too project-specific to be of assistance. Other studies reviewed (Sinclair Knight Merz, 2007; Ministry for the Environment, 2008) contain quantitative information on costs and cost savings only in relation to regulatory processes.

# Comparison of quantitative data and costs and benefits

Appendix 1 estimated implementation costs for central government of $1.15 million and for local government of $100.1 million, giving total implementation costs for government of $101.25 million (in present value terms).

To place this cost in some sort of context, this appendix has identified the following estimates:

- the economic value of the water take by industrial, agricultural, commercial and residential users: $34.85 billion per annum
- the economic value of New Zealand's clean green image: $1 billion per annum
- the economic cost to New Zealand of water-borne diseases of $25 million per annum, and one-off outbreaks of disease potentially costing in the range of $140 million to $200 million each.

Unfortunately, it is not possible to realistically estimate the impact the proposed NPS may have on these economic values. However, they do provide some sort of context in which to consider whether the implementation costs of the proposed NPS are excessive relative to benefits.