Section 32 report:
Water quantity

for the Proposed Natural Resources Plan for the Wellington Region

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Issues and Evaluation Report

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For more information, contact the Greater Wellington Regional Council:

Wellington
PO Box 11646

T 04 384 5708
F 04 385 6960
www.gw.govt.nz

Masterton
PO Box 41

T 06 378 2484
F 06 378 2146
www.gw.govt.nz

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www.gw.govt.nz
regionalplan@gw.govt.nz

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1. Overview and purpose

This report gives an analysis of the appropriateness of the objectives, polices and methods in the Proposed Natural Resources Plan (PNRP) for water quantity allocation. It addresses the allocation of water in and from rivers, lakes and groundwater. It does not address the allocation of water from wetlands, which is addressed in Section 32 report: Wetlands.

Under the Resource Management Act 1991 (RMA), water quantity allocation in its broadest sense encompasses allocation of water to natural water bodies for environmental services and allocation of water for use by people, including taking, using, damming or diverting water.

The analysis in this report is guided by the requirements of section 32 of the RMA.

1.1 Legislative background

Key elements of the Wellington Regional Council's (WRC) approach to managing the allocation of water are Part 2, section 14 and section 30 of the RMA, the National Policy Statement for Freshwater Management 2014 (NPS-FM) and the Regional Policy Statement for the Wellington region (RPS).

Section 14 of the RMA imposes certain restrictions on taking, using, damming or diverting water. These activities are either permitted (e.g. open coastal water) or not permitted unless there is a rule in a regional plan or resource consent allowing the activity to take place (e.g. fresh water). Section 30 of the RMA gives WRC the function of controlling the taking, using, damming or diverting of water, and the quantity, level and flow of water in any water body.

The NPS-FM is a key document that regional councils must give effect to in full by 31 December 2025 (can be extended to 31 December 2030). The process that the WRC is using to implement the NPS-FM is set out in a progressive programme of implementation (WRC 2015). In essence, the NPS-FM is partially implemented by region-wide water quantity provisions in the PNRP. Recommendations from five whaitua (management areas) committees will result in variations or plan changes to include catchment (or sub-catchment) specific provisions that will refine the region-wide provisions and fully implement the requirements of the NPS-FM for water quantity.

The RPS is another key document that the WRC must give effect to when preparing the PNRP. The RPS identifies the following water allocation matters that must be included in the PNRP:

- Flows and water levels and the aquatic habitat of surface water bodies are to be managed for the purpose of aquatic ecosystem health
- The establishment of allocation limits for the total amount of water that can be taken from rivers, lakes and groundwater, taking into account aquatic ecosystem health

- Provision for the health needs of people
- Promotion of the efficient allocation and use of water

There are other important matters derived directly from the legislation that are relevant to the development of the PNRP and are considered in this report. These include a list of matters from section 66 of the RMA (discussed further in section 3.2.3 of this report), the Resource Management (Measuring and Reporting of Water Take) Regulations 2010 and the progressive implementation programme required by Policy E1 of the NPS-FM.

1.2 Report structure and methodology

To fulfil the requirements of section 32 of the RMA, this report identifies and assesses the benefits and costs of the environmental, economic, social and cultural effects anticipated from implementation of PNRP provisions. The structure of the report is as follows:

- *Resource management issues*: an outline of the main issues identified by the community (section 2 of this report)
- *Regulatory and policy context:* identification of relevant national and regional legislation and policy direction, community and stakeholder engagement and what the PNRP addresses (section 3 of this report)
- *Evaluation of objectives*: an evaluation of the extent to which the proposed objectives are the most appropriate way to achieve the purpose of the RMA as required by section 32(1)(a) (section 4 of this report)
- *Options for achieving the objectives*: an evaluation to identify practicable options for achieving the proposed objectives (section 5 of this report)
- *Efficiency and effectiveness of the policies and methods (including rules)*: an assessment of the efficiency and effectiveness of the provisions as to whether they are the most appropriate way to achieve the objectives (section 6 of this report)

The nature of the RMA for the management of taking, using, damming or diverting fresh water is restrictive so that these activities are not permitted unless there is a rule in a regional plan, or resource consent, allowing the activity. It is necessary for the WRC to include rules in the PNRP to avoid the community having to incur unnecessary and unreasonable costs securing resource consent for taking, use, damming or diverting water with negligible effects. This is the common sense approach expected by our community, and one that automatically reduces compliance costs for the community and carries a range of benefits to people living and working in the region. WRC does not consider it necessary, helpful, or proportionate to quantify or monetise these baseline costs and benefits.

The PNRP provisions generally establish an enabling management framework supported by minimum flows, minimum water levels and core allocation amounts. Provisions are also developed in line with industry best practice, and

where appropriate, tailored to specific activities. Costs incurred by industry, landowners and stakeholders, such as conforming to rule conditions, are considered proportionate to the wider environmental benefits that will result from the availability of water to a variety of consumptive and non-consumptive uses.

1.3 Reference to other Section 32 reports

References to other Section 32 reports supporting the PNRP are made in this report and the following should be read in conjunction with this report:

- Section 32 report: Ki uta ki tai
- Section 32 report: Māori values
- Section 32 report: Aquatic ecosystems
- Section 32 report: Wetlands
- Section 32 report: Discharges to water
- Section 32 report: Discharges to land;
- Section 32 report: Beds of lakes and rivers
- Section 32 report: Activities in the coastal marine area
- Section 32 report: Beneficial use and development

2. Resource management issues

Two resource management issues relating to taking, using, damming or diverting water were identified for the region through community engagement (Parminter 2011). These issues have been modified as a result of on-going consultation, but remain the basis for matters that the PNRP addresses in its provisions. The issues are set out below.

2.1 Issue 1: Impacts of taking, using, damming or diverting water

People and communities taking, using, damming or diverting water for their social and economic benefit can have adverse effects on in-stream values

People and communities take, use, dam and divert water from water bodies for the following purposes: domestic, drinking and washing water; animal drinking water; firefighting; flood protection; electricity generation; commercial and industrial processes; irrigation; food production and harvesting; transport and access; and cleaning.

Consented water allocated in the Wellington Region equates to approximately 414 million cubic metres per year (Thompson 2015a). Two-thirds is from surface water and one-third from groundwater sources. Two thirds of the region's total annual volume of allocated water is used in the Wairarapa, predominantly for irrigation. However, across the region as a whole, public water supply is the largest single use of allocated water (39.5%), followed

closely by irrigation (35.6%). Another significant user of water is the Wairarapa water races (19% of the total surface water allocation). Hydro electricity generation accounts for 14% of allocated water in the region. However, the water used to generate electricity is dammed or diverted and returned to the river after a short distance, rather than being taken and used outside of the river (or its bed).

Other consented uses of surface water such as industry, frost protection and filling ornamental lakes account for less than 5% of the total annual allocation in the region. There are also small amounts of water used for activities such as private water supply, stock drinking water and dairy shed washdown (Thompson 2015a).

People and communities want to protect the in-stream values of rivers, lakes and wetlands. Such in-stream values include the following: ecosystems and biodiversity; mahinga kai and areas of natural resources used for customary purposes; places, sites and areas with spiritual, cultural or historic heritage including tauranga waka, taonga raranga, wāhi tapu, wāhi tipuna and urupa; and amenity and recreation. These uses are provided for in the Regional Freshwater Plan (RFP) by minimum river flows and lake levels, and consideration of surface flow or water level variability when applications are made for resource consents.

Taking, using, damming or diverting water can adversely affect the aquatic ecosystem health, mahinga kai, Māori use and recreation values of surface water bodies. Prolonged low flows in rivers can have an impact on aquatic life and potentially exacerbate the effect of pollutants and contamination on ecosystem health and mahinga kai. Low flows in summer mean that water temperatures and algal growths increase, especially if there is no riparian vegetation. Because people's need to take, use dam and divert water is often greatest at times of low rainfall, these activities generally lower river flows when aquatic life is already stressed, so the management of low flow and low water levels is a key part of any allocation system.

Groundwater and surface water are connected such that taking groundwater has an impact on the availability of surface water (and vice versa). Intuitively, people know that surface and groundwater are a single interconnected resource but, in the past, quantifying groundwater connectivity to surface water on a case by case has been confounded by inadequate data that would enable individual catchment (and sub-catchment) circumstances to be addressed. Models have been developed since 2005 that better address catchment groundwater and surface water connectivity for the Ruamāhanga, Hutt and Kāpiti catchments.

Taking and using groundwater can deplete the availability of groundwater in the immediate vicinity of an abstraction point leading to interference or drawdown effects on nearby bores. Taking and using groundwater can reduce groundwater levels in an entire aquifer system, leading to a reduction in the amount of water available in the short and long term. Lowered groundwater levels can also affect the flow of springs, rivers and streams, and water levels

in wetlands. If continued abstractions keep the groundwater level low, dependent ecosystems and mahinga kai can be permanently affected.

Places where water bodies are in their natural state have been reduced from their former extent. As a consequence of their high natural and ecosystem values, the flows and water levels in water bodies with outstanding values should be maintained.

Over 85% of the region's population has access to existing community sources of drinking water (Thompson 2015a). These community water supplies are important to the health needs of people, which are a priority for allocation according to the RPS. Another priority for allocation is an individual's domestic and stock use. This latter priority is provided by the RMA in section 14(3)(b).

2.2 Issue 2: Efficient use of water

Use of water in the region is increasing demand on limited water resources.

Accommodating people's needs for water is becoming more and more difficult because a number of water resources in the region are already fully allocated and others are close to full allocation. In the western part of the region (Kāpiti, Porirua, Wellington and the Hutt Valley) water is taken and used from rivers and groundwater, but not lakes (other than the Macaskill water storage lakes). Larger rivers like Te Awa Kairangi/Hutt River and the Waikanae River are fully allocated (Thompson 2015a). Groundwater aquifers such as the Lower Hutt groundwater zone, the Waikanae groundwater zone and the Waitohu groundwater zone are at, or close to, full allocation (Gyopari 2015 Mzila et al., 2015, Thompson 2015a).

In the Wairarapa (the eastern part of the region) water is taken and used from rivers, groundwater and Lake Wairarapa. Surface water in the Ruamāhanga River catchment, as a whole, is fully allocated at the time of writing (Thompson 2015a), although there are some individual tributary systems that fall below individual river allocation amounts. Some groundwater aquifers are also fully allocated in the Ruamāhanga catchment (Gyopari and Hughes 2014, Thompson 2015a). Lake Wairarapa is also fully allocated when levels are low. Water remains available from rivers in the eastern hill country of the Wairarapa.

To meet increasing demand for water in the Wellington Region, the need for greater efficiency of water use has been recognised and steps towards achieving it are on-going but can be developed further. The efficient use of water is encouraged in the RFP but not required. To date, efficiency of use has largely relied on people recognising the benefits to them and the wider community of optimising their use of water so that more is available for productive purposes.

Many industries recognise that water is becoming short and it is cost effective to use less. Irrigation is an example in the Wellington Region where efficient use technology is being adopted increasingly because it is economic to do so. Tools have become available [e.g, the Soil Plant Atmosphere System – IR tool

(Green 2010)] to determine reasonable and efficient water use based on daily water balances for a range of crops grown on local soils and in local climates. Techniques to help determine the amount and timing of irrigation water are increasingly being used.

Public water suppliers and the end users of water in cities and towns are improving how they conserve water. Water metering occurs in Carterton, Greytown, Martinborough and on the Kapit Coast. In other places, city and district councils have introduced and promoted water conservation measures such as watering restrictions and raising awareness in all sectors of the community. Every council in the region now includes information for the public to help conserve water. For example, Wellington Water which supplies water to Wellington, Hutt Valley and Porirua provides information to the public on water conservation at home and in the workplace on its website.

Policy 18 of the RPS promotes water harvesting and off-line water storage, which would enable water to be used more efficiently at times of water shortage. Storage of water, particularly at high river flows, is used as a mechanism for using water efficiently in other parts of the country such as Canterbury. The efficiency of such an approach is increased if the water is taken and stored off-line for use at times of water shortage. In the Wellington Region most water allocated from surface water (97%) is 'run-of-river', i.e. allocated from rivers, streams and lakes during 'normal' flow conditions. Around 2% is high-flow (or "supplementary") water allocation, and less than 1% is from storage dams (Thompson 2015a).

The Wellington metropolitan area stores water for public water supply in the Macaskill Lakes. There are other small-scale water storage opportunities being taken in parts of the Wairarapa to enhance the use of water for storage and frost protection. While water storage is not widespread, there is increasing interest in it with growing recognition that the opportunities to take run-of-river water during summer months is becoming more and more limited.

3. Regulatory and policy context

The national and regional regulatory and policy context for the provisions in the PNRP are discussed in this section.

3.1 National level

3.1.1 Resource Management Act 1991

A regional plan is an instrument under the Resource Management Act 1991 (RMA) to help local government decide how natural resources should be managed. WRC has a responsibility under section 30(1)(e) of the RMA to control the taking, using, damming and diverting of water and the control of the quantity, level, and flow of water in any water body including:

(i) The setting of any maximum or minimum levels or flows of water

(ii) The control of the range, or rate of change, of levels or flows or water

The RMA itself permits the taking and use of water for firefighting (section 14(3)(e)) and in the case of fresh water for:

(i) an individual's reasonable domestic needs; or

(ii) the reasonable needs of an individual's animals for drinking water;

and the taking or use does not, or is not likely to, have an adverse effect on the environment (section 14(3)(b)).

In the case of coastal water (other than open coastal water), section 14(1) of the RMA permits water required for an individual's reasonable domestic or recreational needs and the taking or use, does not, or is not likely to, have an adverse effect on the environment (section 14(3)(d)).

The presumption of the RMA for managing fresh water allocation is restrictive in that taking, using, damming or diverting water is not permitted unless there is a rule in a regional plan, or resource consent, permitting the activity (section 14(2)).

3.1.2 National Policy Statement for Freshwater Management (2014)

A national policy statement is an instrument available under the RMA to help local government decide how competing national benefits and local costs should be balanced. The National Policy Statement for Freshwater Management (2014) (NPS-FM) requires regional councils to establish objectives and limits for fresh water in their regional plans.

The objectives of the NPS-FM for water quantity are:

B1 *To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the taking, using, damming, or diverting of fresh water.*

B2 *To avoid any further over-allocation of fresh water and phase out existing over-allocation.*

B3 *To improve and maximise the efficient allocation and efficient use of water.*

B4 *To protect significant values of wetlands.*

The NPS-FM requires regional councils to establish objectives and limits for fresh water in their regional plans in Policy B1.

Policy B1 *By every regional council making or changing regional plans to the extent needed to ensure the plans … set environmental flows and/or levels for all freshwater management units in its region (except ponds and naturally ephemeral water bodies) to give effect to the objectives in this national policy statement …*

The NPS-FM also provides directive policies on the efficient allocation and use of water that regional plans must give effect to as follows:

Policy B2 *By every regional council making or changing regional plans to the extent needed to provide for the efficient allocation of fresh water to activities, within the limits set to give effect to Policy B1.*

Policy B3 *By every regional council making or changing regional plans to the extent needed to ensure the plans state criteria by which applications for approval of transfers of water take permits are to be decided, including to improve and maximise the efficient allocation of water.*

Policy B4 *By every regional council identifying methods in regional plans to encourage the efficient use of water.*

Other NPS-FM policies specifically relevant to water quantity allocation are:

Policy B5 *By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.*

Policy B6 *By every regional council setting a defined timeframe and methods in regional plans by which over-allocation must be phased out, including by reviewing water permits and consents to help ensure the total amount of water allocated in the freshwater management unit is reduced to the level set to give effect to Policy B1.*

3.1.3 National Water Conservation (Lake Wairarapa) Order 1989

A matter of national significance that must be considered in the PNRP is the National Water Conservation (Lake Wairarapa) Order 1989 (Lake Wairarapa WCO). Section 67(4)(a) of the RMA requires that a regional plan not be inconsistent with a water conservation order.

Lake Wairarapa is included in Schedule A of the PNRP, which identifies outstanding water bodies (see Section 32 report: Aquatic ecosystems) and in rules for beds of lakes and rivers (see Section 32 report: Beds of lakes and rivers).

3.1.4 Resource Management (Measuring and Reporting of Water Takes) Regulations 2010

Another matter at the national level relevant to the PNRP is the Resource Management (Measuring and Reporting of Water Takes) Regulations 2010. These regulations establish requirements for measuring and reporting that consent holders must meet as a minimum. Implementation of the measuring and reporting regulations is through the resource consent process. A guideline

for measuring and reporting water takes is included in Schedule T of the PNRP.

3.2 Regional level

3.2.1 Regional Policy Statement for the Wellington region

The Regional Policy Statement for the Wellington region 2013 (RPS) identified that one of the issues facing the region is a limited amount of water available for human use and increasing demand. The efficient management of water in the region's water bodies is a matter of vital importance for sustaining the well-being of communities and the regional economy.

Policy 12 of the RPS directs regional plans to include policies, rules and/or other methods requiring flows and water levels, and the aquatic habitat of surface water bodies to be managed for the purpose of safeguarding aquatic ecosystem health and other purposes identified in regional plans. Policy 13 directs regional plans to include policies, rules and/or other methods establishing allocation limits for the total amount of water that can be taken from rivers and lakes and groundwater, taking into account aquatic ecosystem health, and preventing saltwater intrusion. Policy 17 directs regional plans to include policies, rules and/or methods to ensure the allocation and use of water from any river or groundwater source provides sufficiently for the health needs of people. Policy 22 directs regional plans to include policies, rules and/or methods to promote the efficient allocation and use of water and to promote water harvesting.

3.2.2 Regional Freshwater Plan

The operative Regional Freshwater Plan for the Wellington region (RFP) identifies the following issues in respect of taking, using, damming or diverting water:

- The need for people to take and use water from rivers, lakes and aquifers for their economic social and cultural well-being
- Abstraction of water can have adverse effects on natural and/or amenity values, and values that are important to tangata whenua
- Lack of information to establish minimum flows and safe groundwater yield
- Adverse effects of diversion of water on the ecology and flow or level characteristic of rivers, lakes and wetlands
- Alteration of river flows and hydraulic processes that can result from dams or weirs
- Efficient use of water and water conservation measures are recognised as measures that can delay or avoid the need for alternative source of water supply

- Construction and ongoing operation of bores and/or wells has the potential to damage the physical structure of aquifers and can result in contamination of groundwater

The RFP permits some taking, using, damming or diverting water activities. These permitted activities are: minor abstractions (20 cubic metres per day); damming and diverting water by existing structures; minor diversion of water from an existing stream; diversion of water from an artificial stream or water race; and diversion of groundwater.

Non-complying activities in the RFP include damming or diverting water from rivers with a high degree of natural character and taking more than the limits identified in specified rivers and groundwater in the region. Taking, using, damming, or diverting water in all other circumstances is a discretionary activity. Constructing groundwater bores is also a discretionary activity.

Policies in the RFP identify minimum flows for 15 rivers in the region, minimum lake levels for Lake Wairarapa, and allocation limits (referred to as core allocation) are identified for 23 rivers. The rivers with minimum flows and allocation limits are those most under pressure from taking, using, damming or diverting water in the region. In addition to rivers, allocation limits (referred to as safe yields) are identified for all groundwater aquifers used for water abstraction.

3.2.3 Other policy and guidance documents

Section 66(2) of the RMA identifies particular matters that regional councils must have regard to when preparing regional plans. These include:

1. Management plans and strategies prepared under other acts. No management plans or strategies have been identified as being of particular relevance to provisions for taking, using, damming and diverting water in the PNRP.

2. Regulations relating to ensuring sustainability, or the conservation, management, or sustainability of fisheries. The Resource Management (Measuring and Reporting of Water Takes) Regulations 2010, as identified in Section 3.1.4, above, are relevant to the PNRP.

3. Regional policy statements and regional plans or proposed regional policy statements and proposed regional plans of adjacent regional councils. The Marlborough District Council and the Horizons Regional Council have regional policy statements and regional plans that must be considered. Because Cook Strait lies between the land areas of the Wellington Region and Marlborough district, there are no joint issues relating to the provisions for taking, using, damming and diverting of water in the PNRP. No joint issues arise between the Horizons One Plan and the PNRP. Policy P2 on cross boundary matters is included in the PNRP to ensure that any cross boundary issues that may arise can be addressed appropriately.

4. In addition to the above matters, in accordance with section 66(2(a)) of the RMA regional councils must take into account any planning documents

recognised by an iwi authority and lodged with the council, to the extent that its content has a bearing on resource management issues of the region.

Other relevant documents that have been considered in the preparation of the PNRP include drilling standards (NZS 2001) and the *Proposed National Environmental Standard on ecological flows and water levels* (MfE 2008).

3.2.4 Community and stakeholder engagement

The WRC began a region-wide engagement with the community in 2010 to identify the views of the community regarding natural resource management and to help define the issues for the proposed Plan review (Parminter 2011). This involved engagement with iwi partner organisations, the general public, agencies and organisations with interests in resource management, resource users, school children, developers and policy-makers.

The results of the engagement provided direction on water quantity management, including that people wanted water allocation constrained within ecological limits. Groups were generally supportive of increased water storage capacity and irrigation of land in the Wairarapa. Concerns that some groups had about the effects of irrigation on groundwater suggest that increased water use efficiency will be important in the future.

The 2013 review of all community engagement work for the PNRP stated "the 2010 workshops identified that water (out of all the natural resources being considered – fresh water, coastal areas, soils and air) was the most critical resource of concern to participants" and that "the management of fresh water in urban and rural contexts, was the most critical issue needing to be addressed in the regional planning review" (WRC 2013a).

In 2012 and 2013, a series of stakeholder meetings were held on specific topic areas to develop objectives and policies, rules and methods. For water quantity issues, this initially meant workshops for specific topics such as efficient use, minimum flows, allocation limits, existing users and new users. A summary of these workshops can be found on the WRC website (WRC 2013a).

In late 2013 and early 2014, following the release of the Working Document for Discussion (WRC, 2013b) and the discussion around proposed changes to the NPS-FM, a series of stakeholder workshops were held specifically on water quantity. Matters for discussion included allocation limits, minimum flows, existing and new users, efficient use, transferable permits, permitted uses and priorities for allocation.

3.2.5 Proposed Natural Resources Plan and the Regional Freshwater Plan

The proposed Natural Resources Plan (PNRP) uses a framework for taking, using, damming or diverting water that reasonably provides for a range of activities with social, environmental and economic benefits, and also reflects and responds to potential adverse effects of the activities.

The PNRP needs to be considered in the context of a longer timeframe for implementing the NPS-FM as outlined in the progressive implementation programme (WRC 2015) and the Section 32 report: Ki uta ki tai. Provisions for

minimum flows, minimum lake levels and core allocation are ‘interim’ in recognition that the Wellington Region is only part way through a limit-setting process. It is intended that interim minimum flows, minimum lake level and core allocation provisions are refined into agreed limits over coming years and incorporated into the Plan through variations and plan changes. The process to enable this will involve a combination of continued technical and policy assessment and community consultation. Notwithstanding the intended interim nature of these provisions, they are “stand alone” and will operate effectively.

The PNRP provisions for the management of taking, using, damming or diverting water are similar in many respects to provisions in the RFP. However, in revising provisions, the WRC has taken the opportunity to rationalise and consolidate existing permitted activities, including the addition of new permitted activity rules where adverse effects are less than minor. New permitted activity rules for taking and using water are: farm dairy washdown and cooling water; water from water races; site dewatering; and pumping tests.

The level of effort and rigour in the process for setting minimum flows, lake levels and allocation amounts generally reflects the values of the resource, the availability of hydrological data, and the amount of pressure the waterbody is currently under or could be in the future. In practice, this means that the most rigorous assessments were applied in the Ruamāhanga River catchment, the Kāpiti Coast and Te Awa Kairangi/Hutt River, Wainuiomata and Orongorongo catchments. Rivers, lakes and groundwater in the Wairarapa Coast Whaitua and the Te Awarua-o-Porirua Harbour Whaitua are under less pressure from water abstraction and have less available hydrological data.

In catchments of the Waitohu River, Ōtaki River, Mangaone Stream, Waikanae River, Te Awa Kairangi/Hutt River, Wainuiomata River, Orongorongo River and Ruamāhanga River, there is sufficient hydrological and use information to quantify minimum flows, water levels and core allocation. These catchments are close to or fully allocated, and are under the most stress in the region. In these catchments, taking and use of water is a restricted discretionary activity in the PNRP, whereas it is a discretionary activity in the RFP. A restricted discretionary activity is less stringent for resource consent applicants than a discretionary activity because, subject to conditions, the matters to be considered are limited to those over which discretion has been retained. In contrast, for a discretionary activity, all policies in the PNRP are relevant to resource consent applications and must be considered.

In the PNRP, minimum flows, minimum water levels and core allocations are conditions of rules for catchments of the Waitohu River, Ōtaki River, Mangaone Stream, Waikanae River, Te Awa Kairangi/Hutt River, Wainuiomata River, Orongorongo River and the Ruamāhanga River. This is a key change from the RFP where minimum flows, minimum water levels and core allocations are included in policies only, not as conditions in rules. Including minimum flows, minimum water levels and core allocations in the conditions of rules means they are binding on resource consents (with the exception that existing water users can retain existing allocation amounts). If minimum flows, minimum water levels and core allocations in the relevant restricted discretionary rule are not met, the new taking and use of water is

prohibited under the PNRP because the allocation framework of thr PNRP regime is not being met.

Another key difference between the RFP and the PNRP is the management of groundwater and surface water. In the RFP they are managed as separate and isolated bodies of water. There is now a move to a more connected system in the PNRP. More integrated management of surface and groundwater is enabled as a result of groundwater modelling completed for three parts of the region where water use is high – the Ruamāhanga River catchment, Te Awa Kairangi/Hutt River catchment, and Kāpiti Coast (Mzila et al 2015, 2014b Gyopari and Hughes 2014, Gyopari 2015, Thompson Mzila 2015a. The boundaries between groundwater directly connected to surface water and groundwater not directly connected to surface water is established in the PNRP.

The other main difference between the PNRP and the RFP is with regard to management of the efficient use of water. Efficient use of water is "encouraged" in the RFP, and there is one policy relating to it. Efficient use of water is specifically directed by the NPS-FM and the RPS. There are five policies in the PNRP that identify how water should be used efficiently. It is a key matter for discretion in the relevant restricted discretionary activity rules for taking and use of water. In particular, the restricted discretionary activity rules for the taking and use of water identify Schedule R (Criteria for reasonable and efficient use) is a matter for consideration in resource consent applications.

4. Appropriateness of the proposed objectives

Section 32(1)(a) requires that an evaluation report must "examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of the Act".

The appropriateness test applied (MfE 2013) consists of four standard criteria: relevance, usefulness, reasonableness and achievability. These criteria can be summarised as follows:

- *Relevance* – is the objective related to addressing resource management issues? Will it achieve one or more aspects of the purpose and principles of the Resource Management Act?
- *Usefulness* – will the objective guide decision-making? Does it meet sound principles for writing objectives?
- *Reasonableness* – what is the extent of the regulatory impact imposed on individuals, businesses or the wider community?
- *Achievability* – can the objective be achieved with tools and resources available, or likely to be available, to the local authority?

The relevant objectives in the PNRP are assessed against the four criteria listed above in the tables in Appendix of this report and summarised below:

4.1 Proposed objectives

4.1.1 Objective O3

Mauri is sustained and enhanced, particularly the mauri of fresh and coastal waters.

This objective is discussed in full in Section 32 report: Māori values.

In the context of taking, using, damming or diverting fresh water, sustaining and enhancing mauri is addressed largely through the minimum flows, minimum water levels and core allocations in the PNRP. The mauri of water bodies relies heavily on a catchment (or sub-catchment) approach. As identified in the progressive implementation programme for the NPS-FM (WRC 2015), whaitua committees will be considering local evidence on flows and water levels, and allocation limits.

4.1.2 Objective O6

Sufficient water of a suitable quality is available for the health needs of people

Objective O6 recognises that the amount and quality of water available to people for their health needs is a priority use of water and must be provided for through the PNRP. The objective is relevant as it addresses an identified resource management issue in relation to water quantity in response to Issue 1, above.

Having an objective for the quantity of water for the health needs of people is also relevant as it addresses section 14(3)(b)(i) of the RMA, which allows people to take water for their reasonable domestic needs. It also addresses the NPS-FM by recognising Wai Māori/municipal and domestic water supply as a national value of fresh water which must be considered when developing freshwater objectives.

In the context of water quality the objective addresses the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 for the protection of community water supply that must be provided for in the PNRP. It also gives effect to Policy 17 of The RPS that requires allocation and use of fresh water to provide sufficiently for the health needs of people.

The relevance, usefulness, reasonableness and achievability of the objective are further described in Table A1 of the Appendix. The outcome of this objective for water quality will be achieved through the water quality provisions of the PNRP and is discussed further in the Section 32 report: Discharges to water.

4.1.3 Objective O7

Freshwater is available in quantities and is of a suitable quality for the reasonable needs of livestock.

Objective O7 seeks an outcome that water is available in quantities and of a suitable quality for livestock. It responds to Issue 1, above. Section 14(3)(b) of the RMA provides that a person may take, dam or divert water for the

reasonable needs of an individual's animals for drinking water where the taking or use does not, or is not likely to, have an adverse effect on the environment. Hence the availability of water for livestock is, to a large degree, permitted by the RMA itself.

The relevance, usefulness, reasonableness and achievability of the objective are further described in Table A2 of the Appendix. The outcome of the objective for water quality will be achieved through the water quality provisions of the PNRP and is discussed further in Section 32 report: Discharges to water.

4.1.4 Objective O8

The social, economic, cultural and environmental benefits of taking and using water are recognised and provided for within the allocation framework of the Plan.

The objective expresses a key outcome of the PNRP for water quantity allocation. In particular it responds to Issue 1, above. The objective aims for the social, economic, cultural and environmental benefits of taking and using water to be recognised and provided for within the allocation framework of the PNRP. The objective is appropriate because it identifies the relationship between the benefits of taking and using water and key elements of the PNRP's allocation framework. These key elements of the framework are identified in the PNRP as groundwater/surface water connectivity, minimum flows and water levels, and taking, using, damming and diverting water.

The relevance, usefulness, reasonableness and achievability of the objective are further described in Table A3 of the Appendix.

4.1.5 Objective O25

*To safeguard aquatic ecosystem health and **mahinga kai** in fresh water bodies and coastal marine area:*

(a) water quality, flows, water levels and aquatic and coastal habitats are managed to maintain aquatic ecosystem health and mahinga kai, and

*(b) **restoration** of aquatic ecosystem health and mahinga kai is encouraged, and*

(c) where an objective in Tables 3.4, 3.5, 3.6, 3.7 or 3.8 is not met, a water body or coastal water is improved over time to meet that objective.

Objective O25 includes the management of water quality, water quantity and aquatic habitat. The appropriateness of Objective O25 is addressed in full in Section 32 report: Aquatic ecosystems. This report addresses water quantity and aquatic habitat, so the objective addresses Issue 1, above. The objective seeks management of flows and water levels, and aquatic habitats for the shared values of aquatic ecosystem health and mahinga kai. The objective is appropriate because it sets the narrative outcomes to be achieved by the PNRP. The objective is also appropriate because it gives effect to Objective B1 of the NPS-FM and Objective 12 and Policy 11 of the RPS. The relevance,

usefulness, reasonableness and achievability of the objective are further described in Table 4.2 of Section 32 report: Aquatic ecosystems.

4.1.6 Objective O52

The efficiency of allocation and use of water is improved and maximised over time, including by means of:

(a) efficient infrastructure and application methods, and

(b) good management practice, including irrigation, domestic municipal and industry practices, and

(c) maximising reuse, recovery and recycling of water and contaminants, and

(d) enabling water to be transferred between users,

(e) enabling water storage outside river beds.

Objective B3 of the NPS-FM requires the WRC to improve and maximise the efficient use of water. The objective sets out key elements of efficient allocation and use that are to be achieved through the PNRP commensurate with present water allocation and use practices in the region. Objective O52 responds to issue 2. It seeks the efficient use of water for both water quality and quantity outcomes. The objective is appropriate because it is an outcome that the RMA seeks through s7(b) and (ba), Policy B2 to B4 of the NPS-FM and Policies 20, 44 and 45 of the RPS. More efficient use of water will allow water to become available for use by new and existing water users in catchments that are fully allocated.

The relevance, usefulness, reasonableness and achievability of the objective are further described in Table A4 of the Appendix.

4.1.7 Conclusion

The objectives seek to address the shortcomings of the RFP provisions, and create appropriate policy tools for decision-makers and users of the proposed Plan to assess proposals for taking, using, damming or diverting water. The assessment of objectives in the Appendix shows they are appropriate because they:

- Provide appropriate direction to giving effect to the NPS-FM and they give effect to the RPS
- Use language and terminology that is consistent with the RMA, the NPS-FM and the RPS
- Reflect and respond to the values adopted in the PNRP
- Reflect current scientific research and data; and
- Are **useful** in achieving the purpose of the RMA as they provide decision makers with a suite of assessment tools that will enable consistent and

comprehensive consideration of the full range of environmental effects associated with taking, using, damming or diverting water

Assessments of objectives in the Appendix also consider operative RFP objectives and establish that the objectives are more appropriate than operative objectives in the RFP. The proposed objectives from the PNRP are considered to be more relevant and useful in achieving the purpose of the RMA, and it is proposed that they replace existing operative objectives.

5. Options for achieving the proposed objectives

Section 32(1)(b)(i) of the RMA requires an evaluation to identify practicable options for achieving the proposed objectives outlined in section 4. The following options are identified to achieve the objectives for water quantity allocation:

- Maintain the status quo (no changes to the RFP)
- Update RFP provisions to reflect improved information and practice available in 2015 versus the information and practice available in 2000 when the RFP was made operative
- Regulatory approaches
- Non-regulatory approaches

The PNRP adopts all of these options according to the most efficient and effective in the circumstance. The efficiency and effectiveness of the policies and methods (including rules) are described further in Section 6, below.

5.1 Maintaining the status quo

Retaining RFP provisions is an option available to the WRC. It has been 15 years since the RFP became operative (in 2000) and significant changes have occurred in that time relating to available information and practice. For this reason the option that follow in Section 5.2 of updating provisions to reflect current practice and information usually prevail when the efficiency and effectiveness of policies and methods are examined in Section 6 below. One area where the status quo of the operative RFP has been maintained is for minimum flows. The efficiency and effectiveness of maintaining minimum flows from the RFP is discussed further in Section 6.2.

5.2 Update operative freshwater plan provisions

Policies in the RFP that are effective (WRC 2006) can remain in the PNRP. However, in most instances such policies can be improved following the experience of working with them over the last 15 years. Furthermore, significantly greater data and information are now available in relation to many provisions in the RFP. For these reasons, amending RFP provisions is the most effective option in almost all instances, even when the same broad intent of the RFP may apply.

5.3 Regulatory methods (rules)

Most activities taking, using, damming or diverting fresh-water are regulated in the PNRP. This is because the presumption of the RMA for taking, using, damming or diverting water requires resource consent unless permitted by a rule in a regional plan. Almost all permitted activities in the PNRP have conditions on them. The only exception is the permitted activity for taking and use of water from water races which is limited to the taking and use of water authorised by resource consent held by the district council controlling the water race. Hence there is an element of regulation for almost all activities that relate to the taking, using, damming and diversion of water.

5.4 Non-regulatory methods

The PNRP can use non-regulatory methods to achieve objectives as the RFP did. Such non-regulatory methods can complement regulatory methods. They impose no costs on people other than costs that people incur as a result of voluntary participation in implementing the method.

6. Effectiveness and efficiency of the proposed policies and methods (including rules)

PNRP provisions for water quantity are region-wide. For example, minimum flows, minimum water levels and core allocation amounts are based on criteria that apply across the whole region. Such criteria and the provisions relating to them are intended as interim in recognition that the Wellington Region is only part way into the process of implementing the NPS-FM.

As set out in the region's 2015 NPS-FM implementation programme, interim provisions will be modified as a result of variations and plan changes based on the recommendations from the whaitua committees. These recommended minimum flows, water levels and core allocation limits will be on a catchment (and sub-catchment) scale. Minimum flows, minimum water levels and core allocations based on region-wide criteria in the PNRP will be refined by whaitua committees to implement the NPS-FM. Specific assessments of the effectiveness and efficiency of the whaitua-specific recommended provisions will be conducted in the future and in accordance with section 32 of the RMA. Prior to this time, the PNRP will assist giving effect to the NPS-FM by providing interim minimum flows, minimum water levels and core allocations across the region.

Most of the provisions in the PNRP fall into the option in Section 5 above, of updating RFP provisions. Learnings from working with the RFP over the last 15 years or because better data and information are now available will increase the effectiveness of the PNRP (compared to the RFP). There will be minimal effects on costs because many of the improvements included in the PNRP relate to good practice which is already being implemented.

Non-regulatory methods will add to the effective implementation of policies and rules in the PNRP. Costs associated with non-regulatory methods fall largely to the WRC. Other parties involvement in non-regulatory methods is voluntary.

In the PNRP the taking, using, damming or diverting of open coastal water is permitted as prescribed by the default position of the RMA in section 14(1). This is an efficient and effective approach for the PNRP to take because there are no issues in the region to be addressed by the alternative approach of requiring resource consents.

Other than for open coastal water the presumption of the RMA for taking, using, damming or diverting fresh water requires resource consent unless permitted by a rule in a regional plan. Some activities using river and lake beds or discharging to land or water may also involve damming or diverting water. These activities are addressed in the Section 32 report: Beds of lakes and rivers.

As described in section 1.2 of this report the RMA permits the taking of water for firefighting section 14(3)(e). It also permits the taking and use of water for an individual's reasonable domestic needs or the reasonable needs of an individual's animals for drinking water, provided the taking and use does not, or is not likely, to have an adverse effect on the environment as set out in section 14(3)(b). The PNRP places no additional constraints on taking and using water for firefighting and domestic or animal drinking needs. Relying on the RMA for firefighting and domestic or animal drinking needs is an efficient and effective approach because restricting such high priority water uses, if needed, can be done on a location-specific basis through a water shortage direction under section 329 of the RMA.

There are five permitted activity rules and one controlled activity rule in the PNRP specifically for taking and using water. Four of the permitted activities and the controlled activity (Rules R136, R138, R139, R140 and R141) involve small quantities of water. Individually and cumulatively these five activities have adverse effects that are less than minor. An additional permitted activity (Rule R137 – existing farm dairy washdown and cooling water) uses larger amounts of water (individually) at about 250 individual properties in the region. The amount of water taken and used has been assessed and accounted for. Overall, these permitted and controlled activities are efficient and effective because adverse effects (including cumulative effects) are less than minor (five rules) or amounts of water used can be accounted for (Rule R137). Hence, permitted or controlled activity status is appropriate.

There is also a permitted activity rule (Rule R130) for diversion of groundwater. Such a permitted activity rule is the most efficient and effective approach because provided its conditions (flooding, or lowering water levels) are met any adverse effects will be less than minor.

For all other activities taking, using, damming, or diverting water, the PNRP reflects the underlying presumption of the RMA in Rule 135 by requiring discretionary activity resource consent unless an activity is permitted. Other consistent rules that reflect the default position of the RMA are Rule 131 (damming or diverting water in rivers), Rule 133 (damming or diverting water in lakes) and Rule 142 (taking and using water). In the event that conditions in these discretionary activity rules (Rules R131 or R133) for damming or diverting rivers or lakes are not met, non-complying activity resource consents

in Rule R132 and133 will apply. The Discretionary activity default position of the RMA is efficient and effective for the following reasons:

- Water is a commonly held resource without ownership, but managed sustainably by the WRC for people and communities of the Wellington Region;
- The requirement of the NPS-FM to account for quantities of fresh water taken, used, dammed or diverted; and
- The amount of water available for use differs in every catchment (according to land area, climate, topography, geology etc.), but is finite

When resource consent applications are made, they will be considered under the relevant rule according to the policies in the PNRP. The discussion of policies and methods in this section to achieve the objectives has been organised according to key elements of the water allocation topic. These key elements are: the framework for taking and using water; minimum flows and water levels; managing allocation at low flows and water levels; core allocation; supplementary allocation; efficient allocation and use of water; and managing adverse effects. Sections 6.1 to 6.7 give an analysis of the efficiency and effectiveness of policies and methods in the PNRP. Tables in the Appendix summarise options for achieving the objectives and purpose of the RMA, including costs and benefits, efficiency and effectiveness, risks and appropriateness.

6.1 The framework for taking and using water

Taking and using water in the PNRP is the subject of Policy P107, which aims to achieve Objective O8. Objective O8 is that the social, economic, cultural and environmental benefits of taking and using water are recognised and provided for within the allocation framework of the PNRP. Achieving the objective will be assisted by a transparent and certain understanding of key elements of the framework for allocating water in the PNRP. Such key elements for the taking and use of water are addressed in Policy P107 of the PNRP.

In Table 1, Policy P107 links to other policies and rules in Sections 6.2 and 6.4 for taking and using surface water and groundwater. The efficiency and effectiveness of Policy P107 lies primarily in providing transparency and certainty to all users of the PNRP about key elements of the allocation regime that must be considered in all circumstances. These key elements of the allocation framework for taking and using water are integrating surface and groundwater management, minimum flows and lake levels, and core allocation.

Table 1: The allocation framework

Objectives:	O8: Benefits of allocating water
Policies:	P107: The framework for taking and using water See also policies in sections 6.2 and 6.4 of this report
Rules:	See also rules in sections 6.2 and 6.4 of this report
Method:	N/A

The RPS establishes two key elements of the PNRP's framework for taking and using water that must be given effect to. These are requirements for flows and water levels to be managed according to Policy 12 of the RPS and the requirement for allocation limits to be established according to Policy 13 of the RPS. In addition, the NPS-FM, in the longer term, includes a requirement for limits to be established for minimum flows and water levels. The NPS-FM also requires allocation limits to be established.

The final key element of the framework for taking and water in Policy P107 of the PNRP recognises the connectivity between surface water and groundwater. The management of groundwater that is directly connected to surface water versus groundwater that is not directly connected to surface water is referred to in Policy P107 and is discussed further in Section 6.4 in relation to Policy P108, which integrates groundwater and surface water management.

6.1.1 Costs and benefits

The costs and benefits of the framework for taking and using water are described in Table A5 of the Appendix. Costs are addressed in the policies and rules associated with minimum flows and water levels (Section 6.2) and core allocation (Section 6.4). The benefits are that the WRC, resource users and the community will have clarity and certainty about key elements of the regime for taking and using water.

6.1.2 Risk of acting or not acting

The risks of acting or not acting are described in Table A6 of the Appendix. There are no risks associated with the allocation framework. The risk of not acting is that there will be uncertainty in the PNRP over how to interpret the framework for taking and using water and its key elements.

6.2 Minimum flows and water levels

Policies R.P1 (Ruamāhanga Whaitua chapter 7), WH.P1 (Wellington Harbour and Hutt Valley Whaitua chapter 8), P.P1 (Te Awarua-o-Porirua Whaitua chapter 9), K.P1 (Kāpiti Coast Whaitua chapter 10), and WC.P1 (Wairarapa Coast Whaitua chapter 11) establish minimum flows and lake levels for all rivers and lakes in the region. Minimum flows and lake levels are key elements of the framework for taking, using, damming and diverting water required as a consequence of Policies 11 and 12 of the RPS and Policy B1 of the NPS-FM.

The minimum flows and lake levels in the PNRP are the same as those used for specific water bodies identified in the RFP. In the PNRP, for rivers not identified in the RFP, current best practice is applied using a region-wide default flow based on the proposed National Environmental Standard (NES) for ecological flows and water levels promulgated in 2008 (MfE 2008, Beca 2008). Taking such an approach is efficient and effective because it recognises that the Wellington Region is only part way into the process of implementing the NPS-FM through whaitua committees. Minimum flows and lake levels in the PNRP are interim measures.

Minimum flows and water levels are included in the whaitua chapters of the PNRP (chapters 7-11) rather than in the policies (chapter 4) and rules (chapter

5) chapters. The placement of these provisions in whaitua chapters recognises that flows and water levels in the PNRP are interim to the extent that they will be reviewed by whaitua committees. Minimum flows and water levels may be amended by plan changes or variations to the proposed Plan based on specific catchment (or sub-catchment) information following examination by whaitua committees.

As indicated in Table 2, establishing minimum flows and water levels are to achieve three objectives in the PNRP (O3, O8 and O25). The policies for minimum flows and water levels are implemented through a number of rules that are set out in Table 2 and discussed below.

Table 2: Minimum flows and lake levels

Objectives:	O3 Mauri O8 Benefits of allocating water O25 Flows and water levels
Policies:	R.P1 (Ruamāhanga Whaitua), WH.P1 (Wellington Harbour and Hutt Valley Whaiua), P.P1, (Te Awarua-o-Porirua Whaitua) K.P1 (Kāpiti Coast Whaitua), and WC.P1 (Wairarapa Coast Whaitua): Minimum flows and water levels P129: Minimum flows and water levels
Rules:	Condition (a) of R.R1 (Ruamāhanga Whaitua), WH.R1 (Wellington Harbour and Hutt Valley Whaitau), and K.R1 (Kāpiti Coast Whaitua) – restricted discretionary activity R.R2 (Ruamāhanga Whaitua), WH.R2 (Wellington Harbour and Hutt Valley Whaitua), P.R1 (Te Awarua-o-Porirua Whaitua), K.R2 (Kāpiti Coast Whaitua), and WC.R1 (Wairarapa Coast Whaitua) – discretionary activity R.R3 (Ruamāhanga Whaitua), WH.R4 (Wellington Harbour and Hutt Valley Whaitua) and K.R3 (Kāpiti Coast Whaitua) – prohibited activity
Method:	N/A

6.2.1 Rivers

In three instances (the Waiohine River, Mangaone River and Ōtaki River), work by the WRC since the RFP was prepared has identified minimum flows greater than those in the RFP (Thompson 2015b). As mentioned above, minimum flows in the PNRP are interim. They could be amended through variations or changes recommended by whaitua committees. The whaitua committee process will consider for each catchment (or sub-catchment) all the values that are relevant to setting minimum flows and environmental flows under the NPS-FM. Such an approach has not been possible to date because all the values relevant to each catchment have not been identified or considered. While values such as recreation and ecology have been considered in arriving at minimum flows in the Waiohine River, Mangaone River and Ōtaki River, other values have not yet been considered within a consistent catchment (or sub-catchment) framework, including social and economic values associated with security of supply and Māori customary use.

The option of revising minimum flows in three rivers now, knowing that they may be altered again in the short term by whaitua committee processes, is not

efficient or effective because it would provide little certainty to the community or water users. Any change to minimum flows now could be short term depending on when whaitua committees make their recommendations (e.g. the Ruamāhanga Whaitua Implementation Programme is due in December 2015 and a variation to the proposed Plan would be expected soon after). Unnecessary costs could arise for consent holders because of changes made to minimum flows on more than one occasion in the short term. Rather than include the three new flows in the PNRP now based on partial information, it is more appropriate for minimum flows to remain as they are in the interim. In the long term, minimum flows should be considered with a full set of relevant catchment (or sub-catchment) evidence. Such a fuller set of information will be considered by whaitua committees according to the timetable set out in WRC 2015 when arriving at minimum flow recommendations.

Options other than those identified above for minimum flows have not been considered or evaluated. Generally, increasing minimum flows will provide less risk to aquatic ecosystem health and Māori customary use of rivers while less water is available for taking and use. In the converse, reducing minimum flow will increase the security of supply to those people taking and using water while the risk of adverse effects on aquatic ecosystem health and Māori customary use is increased. No other options have been considered because assessment of other minimum flow scenarios has not been undertaken, including the economic impacts of other minimum flow proposals.

In the Ruamāhanga Whaitua, Wellington Harbour and Hutt Valley Whaitua, and Kāpiti Coast Whaitua (chapters 7, 8 and 10), minimum flows and water level limits can be quantified for specific rivers. These are rivers most under stress from taking, using, damming or diverting water in the region. In these areas, sufficient hydrological data and water use information is available to establish numerical minimum flows. The approach of quantifying minimum flows in rivers that are under stress and have sufficient data is effective because of the certainty it provides to all water users.

Minimum flows are identified in restricted discretionary activity rules of the PNRP (Rules R.R1, WH.R1 and K.R1) for specific rivers. Conditions of these restricted discretionary rules require minimum flows to be observed with exceptions for: the health needs of people; rootstock protection; existing industry that is part of group or community water supply (for a period of seven years); and groundwater. These exceptions are discussed further in Section 6.3.

In other catchments in the region that do not have numerically quantified minimum flows (e.g, in the Wairarapa Coast Whaitua (chapter 11), the Te Awarua-o-Porirua Whaitua (chapter 9), and non- specified rivers in other whaitua), less information is available on flows, catchments are not as close to being fully allocated, and there is less stress on water resources resulting from taking and using water. In these locations, minimum flows are not quantified numerically for each river but are included in policies using default flows based on the proposed National Environmental Standard (NES) for ecological flows and water levels promulgated in 2008 (MfE 2008, Beca 2008). The relevant policies are R.P1 (Ruamāhanga Whaitua), WH.P1 (Wellington Harbour and Hutt Valley Whaiua), P.P1, (Te Awarua-o-Porirua Whaitua)

K.P1 (Kāpiti Coast Whaitua), and WC.P1 (Wairarapa Coast Whaitua): Minimum flows and water levels. These policies will be implemented through discretionary activity rules R.R2, WH.R2, P.R1, K.R2, and WC.R1.

Managing minimum flows are a key element of the framework set out in Policy P107 of the PNRP to achieve Objective O8. In the event that minimum flows are exceeded, allowing applications to be made for resource consents carries with it an implication that they may be granted in circumstances other than those recognised in the PNRP. Granting resource consents in such circumstances would be contrary to Objective O8. For this reason an effective approach is to prohibit the taking and use of water that exceeds minimum flows and water levels other than in those circumstances provided for in the PNRP.

The Land and Water Forum in its second report (LAWF 2012) recommended prohibiting the allocation of water that does not meet the allocation regime of a regional plan. Reasons given by the Land and Water Forum apply equally to the Wellington Region. In summary they are:

> *For limits to be effective and provide certainty for all parties they need to be firm, and to be applied and enforced in a transparent and predictable way. When a limit is reached it will be necessary to restrict new activities to avoid adverse cumulative effects. The most effective means to do this is through policies and rules in a regional plan. This means that once a limit is close to being met, any activity that would further diminish the water resource should require a resource consent. Resource use which exceeds the limits (whether by taking water or by discharging contaminants) will need to be managed using prohibited activity status in order to prevent agreed objectives being undermined by the cumulative effects of exceptions.* (LAWF 2012 – executive summary)

In line with LAWF (2012), Rules R.R3, WH.R4 and K.R3 prohibit the taking and use of water in the event that the minimum flows or water levels in condition (a) of these rules are exceeded (subject to the exceptions identified section 6.3 of this report).

6.2.2 Lakes

The only lake in the region that significant quantities of water are taken from is Lake Wairarapa. This lake is subject to the National Water Conservation (Lake Wararapa) Order 1987. It states the wildlife habitat created in part as a consequence of the natural fluctuations of water levels, particularly over the eastern shoreline, is an outstanding feature of Lake Wairarapa. The order prohibits the diversion of water within Lake Wairarapa. Regarding the taking and use of water from Lake Wairarapa, the order states that " … no water rights shall be granted and no general authorisations made, in respect of any part of Lake Wairarapa if the effect would be to diminish significantly the outstanding wildlife habitat features of any part of the lake".

Following the order, lake level management guidelines were developed by the Lake Wairarapa Co-ordinating Committee (Robertson 1991) The management committee that developed the lake level guidelines comprised all the key

statutory authorities and interested groups involved in, or affected by, the management of the lake, including iwi, recreational users, landowners, commercial fishers and environmental groups. Since they were issued, the guidelines have been used as the basis for managing water levels in Lake Wairarapa to achieve sustainable management. These guidelines are the basis for establishing workable minimum lake levels for allocating water from the lake and its marginal drains and small streams.

The PNRP provides a set of seasonal minimum target levels as recommended in the lake level guidelines. For the purpose of allocating water, three conditions for actively managing the direct abstraction of water from the lake or its marginal drains and small streams are included in the PNRP. Abstraction from Lake Wairarapa must cease when minimum lake levels are reached. Minimum lake levels occur when:

- Minimum target lake levels are reached
- Declining trend in lake level over the preceding five days; and
- Flow in the Tauherenikau River falls below the minimum flow in Table 7.1 (Rule R.R1) of the PNRP

The reason for requiring all three conditions to be met simultaneously, rather than just one (such as the target lake level), is to ensure that restrictions are only imposed in the event of genuine high water stress in the lake and its catchment. The artificially managed nature of water levels in Lake Wairarapa, along with the complex influence of levels in Lake Onoke and the Lower Ruamāhanga River, means that there are times when tributary rivers to the lake are below minimum flow and/or target lake levels are not met but lake levels are rising. Likewise, there are times when there is a relatively good river flow into the lake but seasonal minimum target lake levels have still not been achieved. At such times it is considered inappropriate to restrict abstraction from the lake because neither represent periods of genuine catchment water stress.

6.2.3 Costs and benefits

The costs and benefits associated with minimum flows and lake levels are described in Table A.6 of the Appendix. Costs associated with minimum flows and lake levels are similar to current costs because the status quo has been retained. By adopting current RFP minimums and recognising best practice (for rivers without minimum flows in the RFP), as occurs now in the resource consenting process, costs are similar while whaitua committees establish long-erm minimum flows and lake levels. An additional cost associated with reducing category A groundwater takes at minimum flows is addressed in section 6.3.

The benefits are that certainty is provided to consent applicants that the status quo will continue in the immediate future (short term).

6.2.4 Risk of acting or not acting

The risks of acting or not acting are described in Table A6 of the Appendix. In essence, the risk of having no minimum flows or lake levels at all is that the integrity of aquatic ecosystems will be compromised (they will not be safeguarded) and no progress will have been made towards implementing the NPS-FM. There is little risk of retaining the status quo because RFP minimum flows and minimum flows based on current best practice are current "working" methods of assessing minimum flows.

6.3 Managing allocation at low flows and water levels

Policies P111, P112, P114, P115, and P126 manage flows and water levels around minimums identified in the PNRP when the demand for water exceeds the amount available. The policies include requirements to cease or reduce taking, damming and diverting water and any exceptions to such requirements. As identified in Table 3, these policies are to achieve Objective O3, O6, O7, O8 and O25. The policies are appropriate because it is necessary to identify how the taking, damming and diverting of water will be managed when the amount of water that people want to use is more than the amount available. Recommendations from the whaitua committee process could add to or amend these policies.

Table 3: Managing allocation at low flows and water levels

Objectives:	O3 Mauri O6 Health needs of people O7 Livestock O8 Benefits of allocating water O25 Flows and water levels
Policies:	P111: Water takes at minimum flows and water levels P112: Priorities in drought and serious water shortage P114: Priorities when demand exceeds supply P115: Authorising water takes below minimum flows and lake levels P126: Damming and diverting water
Rules:	R136, R137, R138, R139, R140 – permitted activity R141 – controlled activity Condition (a) of R.R1 (Ruamāhanga Whaitua), WH.R1 (Wellington Harbour and Hutt Valley Whaitau) and K.R1 (Kāpiti Coast Whaitua) – restricted discretionary activity R.R2 (Ruamāhanga Whaitua), WH.R2 (Wellington Harbour and Hutt Valley Whaitua), P.R1 (Te Awarua-o-Porirua Whaitua), K.R2 (Kāpiti Coast Whaitua), and WC.R1 (Wairarapa Coast Whaitua) – discretionary activity
Method:	N/A

6.3.1 Policies

Minimum flows and water levels are identified in policies in the whaitua chapters of the PNRP as described in Section 6.2 above. Policy P111 requires the taking of water to not result in flows or water levels falling below minimums except for firefighting, reasonable domestic needs and stock use;

permitted activities; and specific consented activities. The exceptions from minimum flows in Policy P111 of firefighting, reasonable domestic use and stock water are in accordance with section 14(3) of the RMA. Objective O8 of the PNRP is "Fresh water is available in quantities … for the reasonable needs of livestock". Permitted activities in the PNRP are discussed above in Section 6, and are in accordance with the RMA. The application of minimum flows to permitted activities is discussed in Section 6.3.2. The consented activities that are excused from meeting minimum flow requirements are identified in Policy P115, and discussed below.

Policy P112 identifies the priorities for taking water below minimum flows when a water shortage direction is issued. Such a policy is efficient and effective because it provides guidance to the WRC when it issues a water shortage direction at times of drought or serious water shortage. Identifying priorities for water shortage directions in regional plans was a recommendation of the second report of the Land and Water Forum (LAWF 2012).

Policy P114 of the PNRP sets out resource consenting priorities for taking water when rivers are flowing above minimum flows but demand exceeds the amount of water available. In order of importance, the priorities for taking water at these times are: the heath needs of people; stock drinking needs; and other values.

Policy P115 recognises the circumstances when granting resource consents for taking water below minimum flows may be appropriate. These circumstances are: water for the health needs of people as part of group or community water supply; water for industry from a group or community water supply for a transitional period of 7 years; rootstock protection; and taking up to 50% of the amount of category A groundwater available above minimum flows.

Clause (a) of Policy P115 allows water to be taken below minimum flows for human health needs. It is an effective way of meeting Objective O6 of the PNRP. Objective O6 is "Sufficient water … is available for the health needs of people". Policy P115 (a) also recognises the priority given to human health needs by Policy 17 of the RPS.

Clause (b) of Policy P115 gives water taken for industry from a group or community water supply a transitional period of 7 years before minimum flows must be met. Most communities in the region have alternative water sources (including groundwater) available to them and, in the case of Wellington Water, storage is the option used. Communities such as Masterton do not have such alternative water sources and providing a transition period is an appropriate approach.

Allowing some water to be taken below minimum flows for rootstock protection was considered as a special case. The Final Report and Decisions of the Tukituki Catchment Proposal (EPA 2014) allowed water for rootstock protection below minimum flows for the sole purpose of avoiding death of permanent horticulture or viticulture crops. Clause (c) of Policy P115 applies only to crops that take many years to grow and replace. An annual crop that can be replanted and establish in the following year is not addressed within the

provisions in Policy P115(b) for rootstock protection. The provision is effective because it recognises long-term investment over many years by a horticulturalist or viticulturist.

Clause (d) of Policy 115 in the proposed Plan provides for category A groundwater to be reduced at minimum flows by 50% of the amount consented above minimum flows. In the draft Plan consent holders taking category A groundwater were required to cease takes at minimum flows. A transition period of 4 years was included in the draft Plan during which time taking category A groundwater would be unrestricted.

The requirement in the draft Plan for groundwater takes to cease when minimum flows are reached stems from groundwater modelling for the Wairarapa, Hutt Valley and Kāpiti Coast (Gyopari and Hughes 2014, Gyopari 2015, Mzila et al. 2014a, Mzila et al 2014b). Modelling establishes that due to the immediacy of impact, abstraction from category A groundwater can be considered as analogous to direct surface water abstraction in terms of magnitude and temporal response of stream depletion effects. According to the modelling results, category A groundwater abstraction should be managed as if it were surface water.

Following the draft Plan an economic assessment of the implications for existing consent holders of draft Plan requirements to cease take at minimum flows was carried out and reported (Harris 2015). This report considers effects on resource consent holders of changing from the regime in resource consents at the time of writing to the regime in the draft Plan (cease take at minimum flows). The regime in resource consents at the time of writing is variable. It includes restrictions of 25%, 50%, and 100% at minimum flows. In total 146 consents for category A groundwater takes were assessed in relation to flow related restrictions in the following rivers: Mangatarere Stream at Gorge; Papawai Stream; Ruamahanga River at Wardells; Ruamahanga River at Waihenga Bridge; Tauherenikau River at Gorge; Waingawa River at Kaituna; Waiohine River at Gorge; and Waipoua River at Mikimiki Bridge.

It was necessary to examine consents in the Ruamahanga catchment only because, in practice, category A groundwater in the Otaki system is the only other potentially affected location in the region. However, the Otaki does not suffer any restrictions under either the current resource consent or draft Plan regimes.

Harris (2015) sets out the methodology and assumptions applied in relation to flow regimes, land use and areas irrigated, and financial modelling. Results are provided for severity, duration, and frequency of restriction events; dollars per hectare for each scenario/outcome examined; and aggregate outcomes for current resource consents vs draft Plan regimes ($/annum are provided for each of the rivers examined).

Harris (2015) summarises the results for rivers giving information on reliability, estimated changes to operating profit and regional economic outcomes. In its overview, the Report concludes ‘the greatest focus should be on the likely impacts for those in the Waipoua, Mangatarere, Papawai and

Waingawa since these irrigators are likely to suffer considerable financial loss as a result of the changes.

After considering the report of Harris 2015, the requirement of the draft Plan for takes from category A groundwater to cease at minimum flows has not been included in the proposed Plan. Instead, clause (d) of Policy P115 of the proposed Plan requires the taking of category A groundwater to reduce by 50% of the consented amount at minimum flows. Such an approach reflects WRC practice at the time of writing when exisiting resource consents to take category A groundwater are renewed or new consents are considered. In total, consistent with such practice, 115 resource consents in the region already reduce category A groundwater takes by 50% at minimum flows. Thirty one existing resource consents have no such restriction but would be expected to have such a condition included on their resource consent when it is renewed.

Submitters on the draft Plan requested that as well as the priorities identified in Policy P114, additional priorities should be included for industrial uses and food processing, including farm dairy hygiene. Submitters on the draft Plan also wanted water to be available for these priorities below minimum flows in Policy 115. Expanding priorities to include water being available below minimum flows for industrial uses and food processing would increase the frequency of flows occurring below minimum flows. Growth in industry or food processing activities that use water would also add to the amount of water being taken and used below minimum flows.

The PNRP recognises water bodies in many parts of the region are fully allocated at minimum river flows and lake levels. Minimum flows and lake levels in Policy 12 of the RPS and Objective B1 of the NPS-FM, which the PNRP must give effect to, are to safeguard aquatic ecosystems. Allowing flows and levels below minimums increases the risk to aquatic ecosystem health. Storage is promoted in the PNRP as a suitable option for providing water for industrial use, food processing activities and other uses. Allowing such activities to deplete flows and water levels, potentially by increasing amounts over time, is not an effective way to ensure aquatic ecosystems are safeguarded. For industry using water from group or community supply, a transitional period of seven years is included in the PNRP so that alternative uses of water or water storage can be established.

Water takes for existing farm dairy operations, including hygiene, are given priority by providing for them as permitted activities. As part of the planning for a new dairy operation, the availability of water below minimums, including options such as water storage or other alternatives would need to be considered before going ahead.

Policy P126 establishes that the damming or diverting of water shall not reduce flows or water levels below minimums. In line with the requirement that taking and using water should cease at minimum flows it is appropriate that damming and diverting water should also maintain minimum flows.

6.3.2 Methods (including rules)

Minimum flows and water levels are identified in policies in whaitua chapters of the PNRP as described in section 6.2 of this report. Numerical limits for specific rivers in the region and Lake Wairarapa are included in rules in whaitua chapters of the PNRP. These minimum flows or lake level requirements are applied to resource consents through condition (a) of restricted discretionary Rules R.R1, WH.R1 and K.R1 in whaitua chapters of the PNRP (chapters 7, 8 and 10).

Exceptions to the application of minimum flows and lakes levels are identified in condition (a) of the restricted discretionary activity Rules R.R1, WH.R1 and K.R1. Implementing minimum flows and water levels that do not fall within the restricted discretionary activity rules will be considered through discretionary activity Rules R.R2, WH.R2, P.R1, K.R2, and WC.R1 in the whaitua chapters of the PNRP (chapters 7, 8, 9, 10 and 11). When applications for resource consents are made under these rules, the policies in Table 3 will be relevant when deciding what happens when the demand for water exceeds supply.

No minimum flow requirements are included in permitted activity Rules R136, R137, R138, R139 and R140 and controlled activity Rule R141. The total amount of water taken under these rules is likely to be small and compliance with any minimum flow or water level will be difficult or impractical, to enforce. The most efficient and effective approach to limiting permitted activity takes will be through a water shortage direction under section 329 of the RMA when circumstances warrant. Such a water shortage direction would enable targeted engagement and public notification with local communities in specific identified areas of water shortage.

6.3.3 Costs and benefits

The costs and benefits of managing rivers and lakes around minimum flows and water levels remain similar to the allocation framework under the RFP. Costs and benefits are described in Table A7 of the Appendix. There are two main differences between the RFP and the PNRP. There will be a cost to existing users taking category A groundwater without restriction when they renew their existing resource consents. At minimum flows they will be required to reduce their takes by 50% of the amount of water available above minimum flows. These costs are discussed in section 6.3.1 of this report in relation to clause (d) of Policy P115.

There is also a potential cost to industry in group or community water supplies not having water available at minimum flows. No specific costs have been established. These users have their water supplied by city or district councils. Most city and district councils in the region have alternative sources of water available in times of water shortage. Masterton District Council has been identified as a community where the potential exists for water not to be available to industrial users at minimum flows. The option exists for them to store water or have groundwater available as other communities do, and a seven year transition time has been made available.

The benefits of managing rivers and lakes around minimum flows and water levels are greater clarity about how priorities for allocation will be treated in resource consent applications. More integrated management of groundwater and surface water means that all water users in the region will be treated equitably and all the effects of taking and use of water on surface water resources will be recognised.

6.3.4 Risks of acting and not acting

The risk of not having provisions identifying priorities is that there will be uncertainty when resource consents are processed over how to allocate water to competing uses when demand exceeds supply or when minimum flows are reached. Water could also be granted to low priority use when there are competing high and low priority water uses.

6.4 Core allocation

The core allocation of water available for people to take and use is an important element of achieving Objective O8 of the PNRP. Core allocation is defined in the PNRP as "the maximum amount of water that can be taken by all resource consents within a catchment management unit or catchment management sub-unit, other than the amount allowed by supplementary allocation".

Establishing core allocation in the PNRP relies on a region-wide approach. The same approach to allocating water is applied equally in each whaitua across the region. Such region-wide provisions are consistent with the overall approach that the PNRP takes to implementing the NPS-FM by including region-wide provisions as a first step that can be amended as whaitua committees review allocation provisions on a catchment (and sub-catchment) scale. When establishing core allocation in the PNRP, reliability of supply on a catchment basis has not been applied. Māori customary use of water has also not been considered on a catchment (or sub-catchment scale). Instead, the default approach discussed below has been used. An important component of work that whaitua committees will do is consider catchment (or sub-catchment) scale values such as Māori customary use and reliability of supply in coming up with final catchment-wide (or sub-catchment) limits.

Table 4: Core allocation

Objectives:	O8: Benefits of allocating water
Policies:	P108: Integrating groundwater and surface water P113: Core allocation for rivers P116: Re-allocating water Policies R.P2 (Ruamāhanga Catchment Whaitua), WH.P2 (Wellington Harbour and Hutt Valley Whaitua), P.P2, (Te Awarua-o-Porirua Whaitua) K.P2 (Kāpiti Coast Whaitua), and WC.P2 (Wairarapa Coast Whaitua): core allocation
Rules:	Condition (b) of R.R1 (Ruamāhanga Whaitua), WH.R1 (Wellington Harbour and Hutt Valley Whaitau), and K.R1 (Kāpiti Coast Whaitua) – restricted discretionary activity R.R2 (Ruamāhanga Whaitua), WH.R2 (Wellington Harbour and Hutt Valley Whaitua), P.R1 (Te Awarua-o-Porirua Whaitua), K.R2 (Kāpiti Coast Whaitua), and WC.R1 (Wairarapa Coast Whaitua) – discretionary activity R.R3 (Ruamāhanga Whaitua), WH.R4 (Wellington Harbour and Hutt Valley Whaitua) and K.R3 (Kāpiti Coast Whaitua) – prohibited activity
Method:	N/A

6.4.1 Management units

Management units are water bodies identified and mapped in the PNRP within which maximum amounts of water are available for allocation. The water bodies included in each management unit are identified in Tables 7.3, 7.4, 7.5, 8.2, 8.3, 10.2 and 10.3 and mapped in Figures 7.2 to 7.9, 8.1, 8.2, 10.1 and 10.2 in whaitua chapters of the PNRP (chapters 7, 8, and 10). When deciding on management units for the PNRP, the following criteria were regarded as particularly important:

- Taking water at an upstream location in a catchment should be treated equally to taking water at a downstream location;
- The existing spatial framework for allocating water (how much is used and the locations where it is used);
- The locations of the river monitoring network (for accounting purposes); and
- Groundwater and surface water connectivity

The first of these bullet points establishes catchments as an essential component of any management unit approach. Catchments as a management unit ensures that taking water at the top of a catchment and at the bottom of a catchment are treated equitably. The draft NRP included three management units in the Ruamāhanga catchment of upper, middle and lower management units. In the event that the lower unit was fully allocated and the upper and/or middle management units were under-allocated, water would be available in the upper and/or middle management units but not the lower management unit. Taking available water in the upper and/or middle units would exacerbate over-allocation in the lower unit. To allow such takes would be inconsistent with the

directive in the NPS-FM that " … no decision will likely result in over-allocation …" (Objective B2 and Policy B5).

The same situation would apply if management units were separated into a main river stem management unit and tributary management units. Water may be available in tributary management units but not available in the main river stem management unit if it were fully allocated. If the available tributary water was taken it would increase over-allocation in the main river stem and, again, be inconsistent with the NPS-FM directive that "… no decision will likely result in over-allocation …".

The existing spatial framework for allocating water in the RFP (second bullet point above) also needs to be applied. It tells us where water is currently being used (and will continue to be used) and how much is being used at locations across the region. A single allocation amount for a large catchment such as the Ruamāhanga River would not be effective without considering information on existing amounts being used, and how much is being used at locations across the catchment. An effective way of achieving equitable allocation across a catchment is to have a management unit framework that includes both a catchment-wide component and, nested within it, localised components that capture discrete areas that water is allocated from (e.g. tributary rivers).

The other criteria identified in the bullet points above of the river monitoring network and surface water/groundwater connectivity are essential matters that help construct management units. The river monitoring network determines the ability for the WRC to account for water use as required by the NPS-FM. Building groundwater connectivity to surface water into the management unit framework will ensure the effective integration of surface water and groundwater allocation.

Policy P108 identifies the two sources that water is available from. These two sources reflect the management units that are identified and mapped in the tables and figures within the whaitua chapters of the PNRP. The first source of available water is determined by rivers, lakes, and areas of groundwater directly connected to rivers and lakes. The second source of water is areas of groundwater not directly connected to surface water. The two sources of water are referred to in the PNRP as core allocation for surface water and core allocation for groundwater. As shown in Figure 1, groundwater that is directly connected to surface water (category A and directly connected category B groundwater) is allocated with surface water in the same bucket (total amount available). Groundwater that is **not** directly connected to surface water (Category C and category B groundwater not directly connected to surface water) is allocated within a separate groundwater allocation bucket (total amount available).

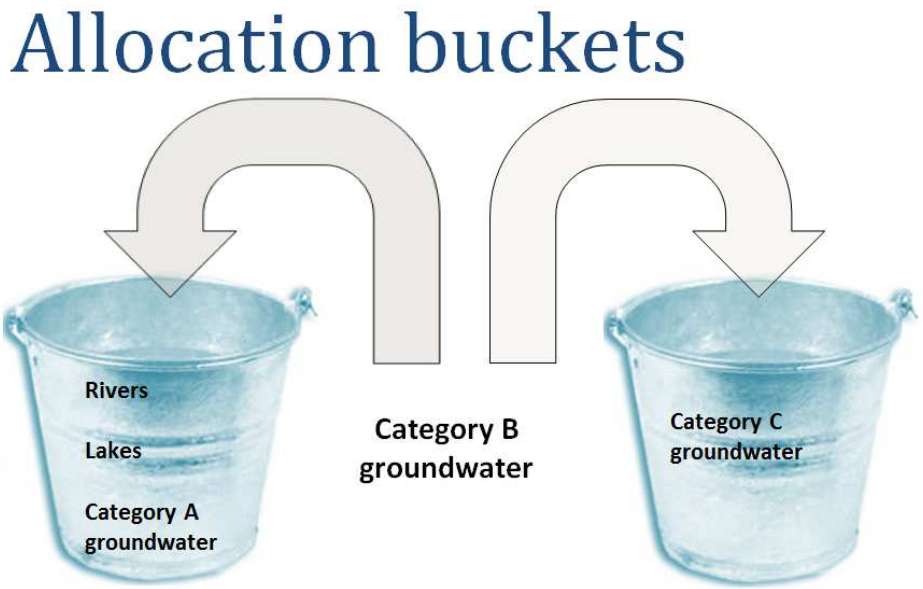

Figure 1: The core allocation "buckets"

Groundwater categories A, B and C are defined in the PNRP. Determining whether groundwater categories are directly connected to surface water or not directly connected to surface water is described in Schedule P of the PNRP. The basis for the groundwater categories is described in detail in a series of conjunctive management framework reports for the Wairarapa Valley (Gyopari and Hughes 2014), Kāpiti Coast (Mzila et al. 2014b) and the Hutt valley Mzila et al. 2014b). The categories relate to the magnitude of surface water depletion effect that is likely to be caused by groundwater abstraction.

There is not an allocation volume assigned to each groundwater category; the categories are simply a means of determining whether groundwater taken from any given location should come from the surface water budget or the groundwater budget, or from both. Category A groundwater is always directly connected to surface water. Category C groundwater is always **not** directly connected to surface water. Category B groundwater may be either directly connected or not directly connected to surface water according to the criteria identified in Schedule P of the PNRP.

6.4.2 Policies and rules

Policy P113 identifies the maximum allocation amounts of water available from rivers and directly connected groundwater that are not specifically identified in whaitua policies of the PNRP. In practice, the policy would apply to rivers in the Te Awarua-o-Porirua Whaitua, the Wairarapa Coast Whaitua and a few rivers in other whaitua where core allocation amounts have not been quantified numerically. Such rivers are not fully allocated and generally not under much stress for water quantity reasons. Only small amounts of water are abstracted from these catchments and there is often insufficient data available to quantify core allocation amounts for specific rivers. Core allocation for specific water bodies will be considered in resource consent applications through discretionary activity rules R.R2, WH.R2, P.R1, K.R2, and WC.R1.

These provisions are efficient and effective because they apply a best practice narrative default allocation amount to rivers not under pressure.

Policies R.P2, HW.P2 and K.P2 in each whaitua chapter of the PNRP (chapters 7, 8, 10) identify core allocation available from rivers, lakes and groundwater through resource consents. The maximum amounts of water available shall not exceed whichever is the greater of the total amount allocated by resource consents, or the numerical allocation amounts for management units in the tables in Rules R.R1, WH.R1 and K.R1 (in whaitua chapter 7, 8 and 10). Because the core allocation provides for existing consented amounts of water there are no direct costs associated with these provisions. It should be noted that there are also requirements in the PNRP for water use to be efficient, which is discussed further in section 6.6.

Allowing existing consented take and use of water to continue is effective because it allows activities to continue for an interim period while whaitua committees finalise core allocations. Core allocation amounts are interim to the extent that whaitua committees will review them and make recommendations on amended amounts in the PNRP to give effect to the NPS-FM. The core allocations in the PNRP may be amended by changes or variations based on specific catchment (or sub-catchment) information that is examined by whaitua committees. The role of whaitua committees in implementing the NPS-FM on a catchment basis is outlined in the WRC programme of implementation for the NPS-FM (WRC 2015).

Surface water allocation

As identified above, core allocation shall not exceed whichever is the greater of the total amount allocated by resource consents, or the numerical allocation amount identified in Rules R.R1, WH.R1 and K.R1 (in whaitua chapters 7, 8 and 10) for the Ruamāhanga Whaitua, Wellington and Hutt Valley Whaitua, and Kāpiti Coast Whaitua. Determining core allocation for surface water and directly connected groundwater uses the approach of the *Proposed National Environmental Standard on ecological flows and water levels* (MfE 2008). The proposed NES recommends that the following approach be adopted:

For rivers and streams with mean flows less than or equal to 5 m^3/s, core allocation is whichever is the greater of:

- 30% of mean annual low flow; or
- The total allocation from the catchment

For rivers and streams with mean flows greater than or equal to 5 m^3/s, core allocation is whichever is the greater of:

- 50% of mean annual low flow; or
- The total allocation from the catchment

Such an approach enables existing users to continue taking and using water for an interim period prior to limits being established in the Plan by variations or

plan changes that adopt the recommendation of the whaitua committees. Users who do not have existing resource consents are able to obtain water if the numerical allocation amounts in Rules R.R1, WH.R1 and K.R1 of whaitua chapters (chapters 7, 8 and 10) are not exceeded. These numerical allocation amounts are based primarily on the maintenance of ecological values.

Adopting the region-wide core allocation provisions of the PNRP will mean that no economic costs are incurred at least for an interim period allowing whaitua committees to establish final catchment (or sub-catchment) allocation limits. Policy B5 of the NPS-FM requires regional councils to ensure that decisions are not likely to result in future over-allocation. Including default region-wide numerical amounts now that must not be exceeded by new users will ensure that future over-allocation does not occur during the interim period from now until whaitua committee recommendations are incorporated into the PNRP adopted via variations or plan changes. For these reasons adopting core allocation according to the Proposed National Environmental Standard on ecological flows and water levels (MfE 2008) is efficient and effective for the interim period.

In the Ruamāhanga Whaitua, Wellington Harbour and Hutt Valley Whaitua, and Kāpiti Coast Whaitua (chapters 7, 8 and 10), allocation amounts can be quantified within management units (and sub-units) that include rivers, Lake Wairarapa and groundwater. These are the areas most under stress in the region from taking, using, damming or diverting water. In these areas, sufficient hydrological data and water use information is available to quantify how much water is being used and how much is available. Allocation amounts are quantified numerically in condition (b) of restricted discretionary activity rules R.R1, WH.R1 and K.R1 of the PNRP.

The approach of quantifying core allocation in management units that are under stress and have sufficient data is effective because of the certainty it provides to all water users. An allocation calculator has been developed by the WRC. It allows a record to be kept of how much water has been consented and how much remains available. The allocation calculator can be updated as resource consents are granted and expire. The allocation calculator will ensure that the total amount of water allocated by resource consents is known at any time and is publicly available. The allocation calculator is designed to give effect to Objective CC1 and Policies CC1 and CC2 of the NPS-FM.

The inclusion of restricted discretionary activity resource consents in Rules R.R1, HW.R1 and K.R1 rather than discretionary activity consents is efficient and effective. It means that less stringent environmental assessment requirements from resource users because allocation amounts are already quantified and assessed for each management unit. A restricted discretionary activity limits the matters that can be considered in a resource consent application to those over which discretion has been retained. Conversely, a discretionary activity rule would mean that all plan provisions should be considered in a resource consent application.

Policy P116 of the PNRP does not allow water freed up by existing resource consents to be re-allocated in fully allocated management units if the numerical

allocation amounts in Rules R.R1, WH.R1 and K.R1 of whaitua chapters of the PNRP (Chapters 7, 8 and 10) are exceeded. The policy provides a "sinking lid" on re-allocation of water in management units that are fully allocated. The policy is consistent with the core allocation framework allowing whichever is the greater of existing consented use or a default numerical allocation amount. The "sinking lid" is for an interim period before the recommendations from whaitua committees on final catchment (or sub-catchment) allocation limits are incorporated into the PNRP through variations or plan changes. No direct economic costs are incurred by current users, any potential for increasing over-allocation in the future will be avoided, and ecosystems will be safeguarded. For these reasons the policy is efficient and effective in the interim while final allocation amounts are decided by whaitua committees.

Not exceeding core allocation is a key element of the framework in Policy P107 of the PNRP to achieve Objective O8. In the event that core allocation amounts are exceeded, allowing applications to be made for resource consents carries with it an implication that they may be granted in some circumstances. Granting resource consents that exceed core allocation would be contrary to Objective O8. For this reason an effective approach will be to prohibit the taking and use of water that exceeds core allocation.

The Land and Water Forum in its second report (LAWF 2012) recommended allocating water that does not meet the allocation framework of a regional plan should be prohibited. The reasons given by the Land and Water Forum apply equally to the Wellington Region. In summary they are:

> *For limits to be effective and provide certainty for all parties they need to be firm, and to be applied and enforced in a transparent and predictable way. When a limit is reached it will be necessary to restrict new activities to avoid adverse cumulative effects. The most effective means to do this is through policies and rules in a regional plan. This means that once a limit is close to being met, any activity that would further diminish the water resource should require a resource consent. Resource use which exceeds the limits (whether by taking water or by discharging contaminants) will need to be managed using prohibited activity status in order to prevent agreed objectives being undermined by the cumulative effects of exceptions.* (Land and Water Forum 2012 – executive summary)

Providing transparency and certainty about the amount of water available promotes efficient use of existing available water (e.g. transfer of water permits and water storage). In line with LAWF 2012, Rules R.R3, WH.R4 and K.R3 prohibit the taking and use of water in the event that core allocation in condition (b) of the restricted discretionary activity rules for the Ruamāhanga Catchment Whaitua, Wellington Harbour and Hutt Valley Whaitua, and Kāpiti Coast Whaitua are exceeded.

Groundwater allocation

Core allocation for groundwater not directly connected to surface water uses the same approach as core allocation for surface water. The core allocation for

groundwater relies on the maximum amount of groundwater available to be taken and used by resource consents not exceeding whichever is the greater of the maximum amount allocated by resource consents or a numerical allocation amount identified in Rules R.R1, WH.R1 and K.R1 in whaitua chapters of the PNRP (chapters 7, 8, and 10). Determining numerical allocation amounts in the rules for groundwater not directly connected to surface water takes account of cumulative depletion effects over the course of many weeks to months, aquifer recharge and throughflow as described in Thompson 2015a.

As applies to the core allocation for surface water, the PNRP provisions are region-wide and will be followed with consideration by whaitua committees of core allocation on a catchment (and sub-catchment) scale. There are some unique features of the Wairarapa Valley, Hutt Valley and Kāpiti Coast groundwater systems that led to some variations in the way the framework is applied. These variations are discussed further in Thompson 2015a.

6.4.3 Costs and benefits

The costs and benefits of the framework for taking and using water are described in Table A8 of the Appendix. There are no new costs to existing users associated with core allocation in the PNRP. Existing users are able to retain existing amounts of water (subject to it being used efficiently).

The benefits are that certainty is provided to consent applicants that the status quo will continue in the immediate future.

6.4.4 Risk of acting or not acting

The risks of acting or not acting are described in Table A8 of the Appendix. In essence, the risk of having no core allocation is that the amounts of water available to be taken and used in the region would be unmanaged and the integrity of aquatic ecosystems compromised (they will not be safeguarded). Also, no progress will have been made towards implementing the NPS-FM.

The main risk of using default allocation limits is that they are based on region-wide numerical limits that do not address reliability of supply, Māori use, and other values on a catchment (or sub-catchment) basis. Assessing such catchment (or sub-catchment) values will be done by whaitua committees who will make recommendations on final allocation limits.

6.5 Supplementary allocation

Enabling water takes above median flows is directed at achieving Objectives O8 and O25 of the PNRP. The associated policies and rules to achieve the objectives are set out in Table 5 and discussed below.

Policy P117 enables water to be taken from rivers at flows above the median flow provided **flushing flows** and a portion of flow above the **median flow** remain in the river. Policy P120 enables the taking of water for storage outside a river bed at flows above the **median flow** provided Policy P117 is satisfied. These provisions give effect to Policy 20 of the RPS that promotes the efficient use of water including water harvesting

Table 5: Supplementary allocation

Objectives:	O8: Benefits of allocating water O25: Flows and water levels
Policies:	P117: Supplementary allocation amounts at flows above the median flow P120: Damming and storing water outside a river bed
Rules:	Condition (c) of R.R1 (Ruamāhanga Whaitua), WH.R1 (Wellington Harbour and Hutt Valley Whaitau), and K.R1 (Kāpiti Coast Whaitua) – restricted discretionary activity R.R2, WH.R2, P.R1, K.R2, and WC.R1 – discretionary activity
Method:	N/A

Policies P117 and P120 recognise that above the median river flow water is often readily available. Information on the in-stream effects of taking water from rivers at median to high flows suggests that providing for flushing flows and maintaining some river flow above the median flow will not result in adverse effects on ecosystem health and mahinga kai. Such an approach is taken in restricted discretionary Rules R.R1, WH.R1 and K.R1. These rules enable users to take water without further examination of environmental effects if the following criteria are met:

- The frequency of flushing flows exceeding three times the median river flows is not changed, and
- 50% of river flow remains in the river above the median flow

The criteria for a supplementary flow regime in the restricted discretionary rules of the PNRP were developed using an expert panel that considered approaches used in other parts of New Zealand and what would be appropriate in the Wellington Region (Thompson 2015c). In the event that additional water is taken above the median flow, discretionary activity Rules R.R2, WH.R2, P.R1, K.R2, or WC.R1 are available to consent applicants. Applying for resource consents under these rules would require a consent applicant to demonstrate an understanding of how changes to the hydrology of the river would impact on river ecology, principally in relation to effects on periphyton.

The approach of the PNRP to supplementary allocation amounts above core allocation is efficient and effective. It recognises that water is available for people to take and use above median flows in addition to the core allocation. In particular, additional water is available that can be stored so that it can be used at times when there are water shortages. It also recognises that adverse environmental effects can occur and a threshold is available below which users can take water without further examination of environmental effects through restricted discretionary activity resource consent. Above the threshold, a discretionary activity resource consent is required that allows flushing flows and the percentage of water remaining in the river to be examined in greater depth according to case-by-case circumstances for an individual river.

6.5.1 Costs and benefits

The costs and benefits of supplementary allocation are described in Table A9 of the Appendix. There are no new costs to existing users associated with supplementary allocation in the PNRP.

The benefits of the supplementary allocation regime are that certainty is provided to consent applicants, particularly those made under a restricted discretionary activity rule, in which case the use of water above median flows is promoted through the application of criteria that enables the taking of water without further environmental assessment. If the criteria are not meet a discretionary activity applies.

6.5.2 Risks of acting and not acting

There are no risks associated with PNRP provisions for supplementary allocation. The risk of not acting is that water may not be available according to core allocation provisions in the PNRP from fully allocated catchments when plenty of water is flowing in rivers. Also, uncertainty would remain in some catchments about how much water is available above median river flows.

6.6 Efficient allocation and use of water

Objective B3 of the NPS-FM is to improve and maximise the efficient use of water. It is supported by Policies B2 and B3 and B4 in the NPS-FM that are set out in Section 3.1.2 of this report. These provisions of the NPS-FM are given effect to, in part, as described below. NPS-FM provisions are not given effect to in full at this time. Full effect will be given to the NPS-FM provisions once whaitua committees in the region have completed their task as described in WRC's programme for implementing the NPS-FM (WRC 2015).

Objectives relating to the efficient allocation and use of water are Objective O3 (Mauri), Objective O25 (aquatic ecosystems and mahinga kai) and Objective O52 (efficient allocation and use of water). Policies P11, P109 P118, P119, P120, and P128 set out the approach of the PNRP to improving and maximising efficiency of the allocation and use of water in the region. These policies are primarily to achieve Objective O52 of the PNRP. As well as giving partial effect to NPS-FM provisions, they give effect to Objective 14 and Policies 10 and 44 of the RPS.

The relationship between objective O3, Objective O25 and Objective O52 and the proposed policies is shown in Table 6 below, as is the relationship with the proposed rules and other methods intended to implement the policies.

Table 6: Efficient allocation and use of water

Objectives:	O3: Mauri O25: Flows and water levels O52 efficient allocation and use of water
Policies:	P11: In-stream water storage P109: Lapse dates affecting water takes P118: Reasonable and efficient use P119: Unused water P120 Taking water for storage P128 Transfer of water permits
Rules:	R143 Temporary water permit transfers – controlled activity R144 Transferring water permits – restricted discretionary activity R145 Transferring water permits – discretionary activity R.R1 (Ruamāhanga Whaitua), WH.R1 (Wellington Harbour and Hutt Valley Whaitau), and K.R1 (Kāpiti Coast Whaitua) – restricted discretionary activity R.R2 (Ruamāhanga Whaitua), WH.R2 (Wellington Harbour and Hutt Valley Whaitua), P.R1 (Te Awarua-o-Porirua Whaitua), K.R2 (Kāpiti Coast Whaitua), and WC.R1 (Wairarapa Coast Whaitua) – discretionary activity
Method:	M18 M19

6.6.1 Policies and methods (including rules)

Policy P11 includes the efficient use of water as one of the matters to be provided for when considering whether the damming and storage of water within the bed of a river is appropriate. Other elements of Policy P11 are discussed in Section 32 report: Beneficial use and development.

Policy P109 is that resource consents to take and use water shall be given effect to within three years of the commencement date unless a longer lapse date is justified due to the scale or complexity of the activity. The policy is an effective way of ensuring that allocated water is used. Policy P118 identifies the particular matters to be considered in resource consent applications relating to reasonable and efficient water use. These matters include criteria that rely on good practice for irrigators, public water supply, water races and good practice that is available to other industries. Policy P119 identifies the circumstances when unused water held by an existing resource consent would be re-allocated. Policies P118 and P119 are efficient and effective because they provide transition times for upgrading infra-structure and implementing new on-farm management strategies. They also provide flexibility in the methods used to achieve efficient use of water and rely on good practice approaches rather than regulating for specific methodologies to be adopted in every situation. The main users of water in the region all have different characteristics and water use efficiency around each should be addressed using a mix of regulatory and non-regulatory approaches.

Policy P120 recognises that damming and storing water outside a river bed above median river flows is inherently an efficient use of water and will be enabled so long as flushing flows and a portion of river flow remain in the river. It is an efficient and effective approach because it frees up water for taking and use at times when it is readily available.

Policy P128 identifies the circumstances when the transfer of water permits will be enabled. Transferring water from one location to another is an efficient and effective approach because it provides for increased use of water that has already been allocated. Permitted activity rules in the PNRP include conditions that require efficient use of water. The general permitted activity rule for taking and use of water (Rule R136, condition (e)) and the permitted activity rule for farm dairy wash-down (Rule R137, condition (g)) require water to be conserved.

Rules R143, R144, and R145 give resource consent holders the ability to transfer the taking and use of water to users at other locations. Such transfers are enabled by these rules when a consent holder is not using their allocated amount of water and want to make it available to another person. Making such water available to others means unused allocated water can be used where it is needed, thereby achieving efficiencies in the use of water.

Transferring water is currently applied through only a handful of resource consents in the region. While it is a mechanism that is enabled (Policy P128) and promoted, it is difficult at this time to anticipate how it will be taken up and used, and for what purposes. Rule R143 is a controlled activity for temporary water transfer (up to 1 year) within the same management unit or sub-unit. Three years was considered as a possible term for such a temporary transfer but one year is considered more effective because whaitua committees have yet to recommend final water allocation limits that potentially could change water allocation amounts. In addition, the consenting "package" for transferring water that includes temporary and permanent options is a matter best decided at a catchment level by whaitua committees.

Using a permitted activity rule for transferring water permits was considered as an alternative option. Water takes that can be transferred are often for large amounts of water and accounting for them is required under the NPS-FM. (Objective CC1 and policies CC1 and CC2). Such accounting should include the transfer of water. Accounting for transfers through a permitted activity rule is not realistic or feasible. Furthermore, measuring and reporting such transferred water according to the *Resource Management (Measuring and Reporting of Water Takes) Regulations 2010* is also unrealistic through a permitted activity rule. While the transfer of water through a permitted activity rule would enable water to be transferred between users, conditions cannot realistically be placed in such a rule that could control efficient use for all the different uses of water that could arise for water transferred to different locations (e.g. different crop and soil types).

Rule R144 is a restricted discretionary activity for the transfer of water not meeting the conditions of Rule R143 or for a transfer lasting longer than one year within the same management unit. Such a rule is efficient and effective

because discretion is restricted to the same matters considered in the original permit application.

Rule R145 is a discretionary activity for the transfer of water that does not meet the conditions of rules R143 or R144, including the transfer of water across different management units or sub-units. A discretionary activity is effective in achieving Objective O3 where the transfer would move water across different catchments because it would allow mana whena concerns about mixing water between catchments to be addressed. A discretionary activity is also effective in achieving Objective O25 where the transfer would move water across different management units or sub-units because each may have different minimum flows, minimum water levels and core allocations.

Three of the whaitua chapters of the PNRP (chapters 7, 8 and 10) contain restricted discretionary and discretionary rules for taking and use of water (Rules R.R1, WH.R1, and K.R1). Criteria for reasonable and efficient use of water in Schedule Q are included in the matters of discretion in relation to these rules. Rules R.R2, WH.R2, P.R1, K.R2, and WC.R1 are discretionary activity rules. Criteria for reasonable and efficient use of water in Schedule Q will be matters considered in resource consent applications made under these rules. The use of Schedule Q in these instances is efficient and effective because it gives matters for consideration in resource consent applications when deciding whether the use of water is efficient.

Method M18 of the PNRP is a non-statutory method that directs the WRC to support water user groups. Water user groups are individual water users who manage their water takes in a collective manner to achieve efficiencies, including through the transfer of water permits. Such User Groups are increasingly involved in day to day management of water resources around New Zealand and can be an effective approach in the Wellington Region with the support of the WRC.

Method M19 requires the WRC to work with city and district councils, water users and industry groups to encourage the efficient use of water. Various matters identified in Method M19 to encourage efficiency include a freshwater accounting system, measuring and reporting on water permits, promoting and providing advice on models for efficient water use, alternatives to water races, assisting communities to conserve water, and promoting water outside river beds. Overall, non-regulatory methods may often be the most efficient and effective way to ensure water is used efficiently.

6.6.2 Costs and benefits

The costs and benefits of efficient allocation and use of water are described in Table A10 of the Appendix. Costs to users are infra-structure, assessing efficient use and monitoring. Benefits will occur from providing greater certainty to resource consent applicants and the community about what is expected with regard to efficient allocation and use of water. There will also be benefits associated with water that is currently used inefficiently being released for use to other uses.

The benefits of provisions are that certainty is provided to consent applicants, particularly on the elements of efficient use of water that are to be considered in resource consent applications. More efficient use of water in fully allocated catchments will release water that can be made available to other water uses.

6.6.3 Risks of acting and not acting

There are no risks associated with PNRP provisions because they rely heavily on best practice. The risk of not acting is that current practice would continue and there would be no improvements in the efficiency of water use.

6.7 Managing adverse effects

Objectives O3, O8, and O25 in the PNRP will all require adverse effects of activities to be managed. Policies P110, P121, P122, P123, P124, P125, P126, P127, P130 and P131 will achieve these objectives by managing the adverse effects of taking, using, damming and diverting water. They address such matters as cumulative effects, preventing salt water intrusion; flow variability, interference effects associated with groundwater takes or surface water takes on other water users; site dewatering; cross contamination of aquifers, backflow of contaminants, and constructing or decommissioning bores.

The relationship between Objectives O3, O8, and O25 and the proposed policies is shown in the Table 7 below, as is the relationship with the proposed rules and methods intended to implement the policies.

Table 7: Managing adverse effects

Objectives:	O3 Mauri O8 Benefits of allocating water O25 Flows and water levels
Policies:	P110: NPS-FM requirements for water takes, damming and diversion P121: Preventing salt water intrusion P122: Flow variability P123: Direct, cumulative interference effects P124: Surface water intakes P125: Taking of groundwater P126: Site dewatering P127: Backflow of contaminants P130: Bores P131: Bores no longer required R.P3:Cummulative effects on river reaches of allocating water

Rules:	R146: Geotechnical investigation bores – permitted activity R147: Drilling, construction or alteration of any bore – controlled activity R148: Drilling, construction or alteration of any bore – discretionary activity R.R1 (Ruamāhanga Whaitua), WH.R1 (Wellington Harbour and Hutt Valley Whaitau), and K.R1 (Kāpiti Coast Whaitua) – restricted discretionary activity R.R2 (Ruamāhanga Whaitua), WH.R2 (Wellington Harbour and Hutt Valley Whaitua), P.R1 (Te Awarua-o-Porirua Whaitua), K.R2 (Kāpiti Coast Whaitua), and WC.R1 (Wairarapa Coast Whaitua) – discretionary activity
Method:	N/A

6.7.1 Policies and rules

The need to manage the adverse effects of the matters identified in the provisions in Table 7 are all identified in policies of the RFP or are currently applied through resource consents as best practice. The requirement of the RMA to avoid, remedy or mitigate adverse effects is the means through which the policies will be implemented in resource consents.

Policy P110 is to ensure the cumulative adverse effects of individual activities taking, using, damming and diverting water is given regard to in resource consent applications. This policy is required to give effect to the same policy (B7) in the NPS-FM. Policy P121 is to prevent saltwater intrusion into aquifers. The RFP addresses the issue but only in detail for the Waiwhetu aquifer in Lower Hutt. Proposed Policy P121 includes coastal aquifers on the Kāpiti Coast. A water level at the coast is able to be identified for each groundwater zone intersecting with coastal water. Providing variable river flows in Policy P122 gives effect to Policy 18 (b) of the RPS. It is an effective policy to consider when consent applications are made to take, use, dam or divert water.

Policies P123 (groundwater) and P124 (surface water) update policies in the RFP on direct, cumulative, interference effects of taking water on other water users. Policies P125 and P127 address cross contamination of aquifers and backflow contamination of surface waters and aquifers. Policy P126 addresses the activity of site dewatering. Policies P130 and P131 update RFP policies on construction and decommissioning of bores. Policy R.P3 is to have regard to cumulative effects on aquatic ecosystems in downstream river reaches as a result of flow depletion to groundwater. It is an effective way of ensuring that such losses to groundwater can be considered in resource consent processes.

Rule R146 is a permitted activity for constructing geotechnical bores. Rule R147 is a controlled activity for drilling, construction or alteration of any groundwater bore. Requiring a resource consent that has to be granted is an effective means of ensuring that bore construction and operation is carried out according to New Zealand Standards (NZS 2001) and does not result in groundwater contamination. Discretionary activity Rule R148 is an effective way of ensuring that bore construction not meeting controlled activity conditions can be considered and granted or declined as appropriate.

6.7.2 Costs and benefits

The costs and benefits of managing adverse effects of taking, using, damming, and diverting water are described in Table A11 of the Appendix. There is little change in costs for what is expected and required in the future compared with how these activities are carried out now. The overall benefits are that greater certainty is provided about matters that must be avoided, remedied or mitigated in the future.

6.7.3 Risks of acting and not acting

There is little risk associated with the provisions in Table 7 of this report because the practices included are currently applied through resource consents now. The risk of not acting is that practice will not be formally updated and sustainable management will not be achieved in the most efficient and effective way.

References

Beca. 2008. *Draft guidelines for the selection of methods to determine ecological flows and water levels*. Report prepared for Ministry for the Environment, Wellington.

Environmental Protection Agency. 2014. *Final Report and Decisions of the Tukituki Catchment Proposal*. Board of Inquiry into the Tukituki Catchment Proposal.

Green S, 2010. *The SPASMO –IR tool to determine reasonable water use for the Greater Wellington region*. A report prepared for Greater Wellington by the New Zealand Institute for Plant & Food Research Limited.

Gyopari M. 2015. *Conjunctive water management recommendations for the Hutt Valley*. Prepared for Greater Wellington Regional Council by Earth in Mind Ltd. Publication No. GW/ESCI-T-15/77, Wellington.

Gyopari M and McAlister D. 2010a. *Wairarapa Valley groundwater resource investigation: Upper Valley catchment hydrogeology and modelling*. Greater Wellington Regional Council, Publication No. GW/EMI-T-10/74, Wellington.

Gyopari M and McAlister D. 2010b. *Wairarapa Valley groundwater resource investigation: Middle Valley catchment hydrogeology and modelling*. Greater Wellington Regional Council, Publication No. GW/EMI-T-10/73, Wellington.

Gyopari M and McAlister D. 2010c. *Wairarapa Valley groundwater resource investigation: Lower Valley catchment hydrogeology and modelling*. Greater Wellington Regional Council, Publication No. GW/EMI-T-10/75, Wellington.

Hughes B and Gyopari M. 2014. *Wairarapa groundwater resource investigation: Framework for conjunctive water management*. Greater Wellington Regional Council**.** Publication No. GW/ESC-T-14/94, Wellington.

Harris S. 2015. *Wairarapa Flow Regimes: Economic impact of draft Plan changes*. A report prepared by Simon Harris for the Greater Wellington Regional Council.

Land and Water Forum. 2012. Setting limits for water quality and quantity freshwater policy – and plan making through collaboration.

Ministry for the Environment. 2008. *Proposed National Environmental Standard on ecological flows and water levels.* Discussion Document. Ministry for the Environment Publication No. ME 868, Wellington.

Mzila D, Gyopari M, and Hughes B. 2014. *Kāpiti Coast Groundwater Resource investigation: Catchment hydrogeology and modelling report.* Publication No. GW/ESC-T-14/92, Wellington.

Mzila D, Gyopari M, and Hughes B. 2015. *Kāpiti Coast groundwater resource investigation: Proposed framework for conjunctive water management*. Greater Wellington Regional Council**.** Publication No. GW/ESC-T-14/62, Wellington.

Ministry for the Environment. 2013. *A guide to section 32 of the Resource Management Act 1991: Incorporating changes as a result of the Resource Management Amendment Act 2013, Interim guidance*. Wellington; Ministry for the Environment.

NZS 2001: *Environmental Standard for Drilling of Soil and Rock*. New Zealand Standard NZS 4411:2001.

Parminter T. 2011. *Your view about our environment – public engagement (2010) for the Natural Resource Regional Plan Review for the Wellington Region*. Wellington Regional Council, Wellington.

Robertson H 1991. *Lake Wairarapa Wetlands Management Guidelines 1991*. Prepared for the Lake Wairarapa Co-ordinating Committee by Department of Conservation.

Thompson M. 2015. *Minimum flow recommendations for the Wellington region: Technical report to support the proposed Regional Plan*. Greater Wellington Regional Council publication No. GW/ESCI-T-15/85, Wellington.

Thompson M. 2015. *Allocation recommendations for the Wellington region: Technical report to support the proposed Natural Resources Plan*. Greater Wellington Regional Council. Publication no. GW/ESC-T-15/84, Wellington.

Thompson M. 2015. *Selection of default supplementary allocation criteria for the Natural Resources Plan*. Greater Wellington Regional Council internal memo. WGTN DOCS #1473074.

Thompson M and Mzila D. 2015, *Lake Wairarapa water balance investigation: Stage 1 report – interim findings and recommendations.* Greater Wellington Regional Council. Publication no. GW/ESC-T-15/47, Wellington.

Wellington Regional Council. 2006. *Regional Freshwater Plan evaluation – A review of the efficiency and effectiveness of provisions in the Regional Freshwater Plan*. Greater Wellington Regional Council. Publication no. GW-RP-06-62.

Wellington Regional Council. 2013a. *Review of Greater Wellington public engagement and consultation for the Natural Resources Regional Plan 2009-2013*. Greater Wellington Regional Council, Wellington.

Wellington Regional Council. 2013b. *Regional Plan Working Document for Discussion*. Greater Wellington Regional Council.

Wellington Regional Council. 2014. *Issues for the draft Natural Resources Plan for the Wellington region*. Greater Wellington Regional Council, Wellington. 35 pp.

Wellington Regional Council. 2015. *Programme of time-limited stages for implementation of the National Policy Statement for Freshwater Management 2014 (NPS-FM) and progress to July 2015*.

Appendix

Table A1: Objective O6 – Health needs of people (described in section 4.1.2)

Objective O6 Sufficient water of a suitable quality is available for the health needs of people	
Relevance	
Directly related to resource management issue?	Yes, this objective addresses issue 1 for water quantity.
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, section 5(2). In the Act, sustainable management means "enabling … people and communities to provide for their social, economic, and cultural well-being and their health and safely." Section 14(3)(b)(i) allows people to take water for their reasonable domestic needs.
Relevant to Māori environmental issues?	Yes, sections 6(e), 6(g), 7(a), 8.
Relevant to statutory functions or to give effect to another plan or policy?	NPS-FM – Wai māori / municipal and domestic water supply is an identified national value of fresh water. Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007. RPS – Policy 17 requires allocation and use of fresh water to provide sufficiently for the health needs of people.
Usefulness	
Will effectively guide decision-making?	The objective provides a suitable priority to be given to the health needs of people when water is allocated through resource consents to competing users of the resource.
Meets sound principles for writing objectives?	This objective is a clear statement that enough water of suitable quality shall be available for peoples' health needs.
Consistent with other objectives?	Yes, all the objectives have been assessed, and work together to achieve the sustainable management of natural resources in the Wellington region.

Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measureable and how would its achievement be measured?	Both the amount of water and the quality of water for people's health needs in communities can be, and are, measured. In particular, the achievement of the objective will become clear through the ability of water supply authorities to obtain the water they need to provide sufficiently for the health needs of people they supply water to.
Is it expected that the objective will be achieved within the life of the PNRP or is it an aspirational objective that will be achieved sometime in the future?	This objective is currently achieved and will continue to be achieved in the life of the proposed Plan.
Does the council have the powers, and policy tools to ensure that they can be achieved? Can you describe them?	Yes, the Council has appropriate functions and powers to control water quality under sections 9 to 15 and section 30 of the RMA to ensure the objective can be achieved. In particular the objective will be achieved through: • Section 14(3)(b)(i) that allows people to take water for their reasonable domestic needs • Resource consents to take water that water supply authorities currently hold – the renewal of resource consents is supported by policies and rules in the PNRP • Resource consents to discharge to land and water – policies in the PNRP (e.g. Policy LW.P63) protect community drinking water sources • Permitted activities in the PNRP (e.g. LW.R38, LW.R40, LW.R40, LW.R41) exclude discharges in community water supply catchments) as required by the Resource Management (National Environmental Standards for sources of Human Drinking Water Regulations 2007).
What other parties can the Council realistically expect to influence to contribute to this outcome?	• Territorial authorities supply water to communities for their health needs • Individual households provide for their own domestic water supply, particularly in rural situations.
What risks have been identified in respect of outcomes?	The main risks are: • Risk to water quality in catchments used for water supply with contaminants discharged upstream of water supply intakes. • Risk of an unforeseeable event that pollutes water in a community water supply catchment • The risk of drought affecting the amount of water available.

Reasonableness	
Does the objective seek an outcome that would have greater benefits either environmentally or economically/socially compared with the costs necessary to achieve it?	Yes – the objective seeks continuation of the status quo (quality and quantity currently meet the health needs of people).
Who is likely to be most affected by achieving the objective and what are the implications for them?	All people and communities in the region will benefit from achieving the objective. If the objective is not achieved for any reason the health and safety of communities will be at risk.
Existing objectives	
Are the existing objectives still relevant or useful?	Objectives in the RFP refer to "water quality meeting the range of uses and values for which it is required". The objective is not specific enough to adequately achieve outcomes for the health needs of people.

Table A2: Objective O7 – reasonable needs of livestock (described in section 4.1.3)

Objective O7 Freshwater is available in quantities and is of a suitable quality for the reasonable needs of livestock.	
Relevance	
Directly related to resource management issue?	Yes, this objective addresses issue 1.
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes. Sections 6(e), 6(g), 7(a), 8.
Relevant to Māori environmental issues?	Yes. Sections 6(e), 6(g), 7(a), 8.
Relevant to statutory functions or to give effect to another plan or policy?	RMA sections 30(1)(c)(iii), 30(1)(f),s30(1)(g) & 14(3)(b)(ii) NPS-FM identifies animal drinking water –the needs of stock – as a national value of fresh water.
Usefulness	
Will effectively guide decision-making?	This objective will help ensure the needs of stock for drinking water are adequately addressed in the PNRP and resource consents.
Meets sound principles for writing objectives?	This objective is a clear and complete sentence related to an issue.

Consistent with other objectives?	Yes, all the objectives have been assessed, and work together to achieve the sustainable management of natural resources in the Wellington region.
Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measurable and how would its achievement be measured?	Yes, the achievement of this objective (or not) will be highlighted in the eventuality that livestock are not provided for adequately.
Is it expected that the objective will be achieved within the life of the PNRPor is it an aspirational objective that will be achieved some time in the future?	This objective will be achieved in the life of the PNRP.
Does the Council have the powers, and policy tools to ensure that they can be achieved? Can you describe them?	Yes — the RMA gives WRC a full suite of functions for water quality and water quantity
What other parties can the Council realistically expect to influence to contribute to this outcome?	All resource-users
What risks have been identified in respect of outcomes?	The risk to water quality and quantity in relation to stock is reliant upon adequate plan provisions for water quality (water quantity is assured by having adequate minimum flow provisions).
Reasonableness	
Does the objective seek an outcome that would have greater benefits environmentally, economically or socially compared with the costs necessary to achieve it?	Yes – this objective will have greater environmental benefits than the costs necessary to achieve it.
Who is likely to be most affected by achieving the objective and what are the implications for them?	The owners of stock.
Existing objectives	
Are the existing objectives still relevant or useful?	There are no operative objectives specifically addressing this natural resource management issue.

Table A3: Objective O8 – Allocation framework of the PNRP (described in section 4.1.4)

Objective O6 The take and use of water for social, economic, cultural and environmental benefits is recognised and provided for within the Plan's allocation framework.	
Relevance	
Directly related to resource management issue?	Yes, this objective addresses issue 4.4 (*WRC 2011*).
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, section 5(2). In this Act, sustainable management means managing resources to "enable … people and communities to provide for their social, economic, and cultural well-being … ".
Relevant to Māori environmental issues?	Yes. sections 6(e), 6(g), 7(a), 8.
Relevant to statutory functions or to give effect to another plan or policy?	NPS-FMidentifies the following as national values of fresh water: • Social values (Wai Māori/municipal and domestic water supply; Te Hauora o te Tangata / the health and mauri of the people; Mahinga kai / food gathering, places of food) • Economic values (Āu Putea/economic or commercial development; Mahi māra/ cultivation) • Cultural values (Te Hauora o te Tangata/the health and mauri of the people; Mahinga kai/ food gathering, places of food; Wai Tapu/Sacred Waters) • Environmental values (Te Hauora o te Wai/the health and mauri of water; Te Hauora o te Taiao / the health and mauri of the environment).
Usefulness	
Will effectively guide decision-making?	The objective will ensure that the benefits of social, economic, cultural and environmental values are recognised when decisions are made on the taking and use of water. It will guide the processing of resource consents for activities when social, economic, cultural and environmental values should be considered
Meets sound principles for writing objectives?	This objective is a clear and complete sentence related to issues. This objective aims to deliver benefits on all occasions.
Consistent with other objectives?	Yes, all the objectives have been assessed, and work together to achieve the sustainable management of natural resources in the Wellington region.

Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measurable and how would its achievement be measured?	Yes, the achievement of this objective will be identified by: • State of the environment monitoring • Monitoring/reporting the effectiveness and efficiency of the proposed Plan • Specific monitoring of resource consents.
Is it expected that the objective will be achieved within the life of the PNRP or is it an aspirational objective that will be achieved some time in the future?	This objective will be achieved in the life of the PNRP.
Does the Council have the powers, and policy tools to ensure that they can be achieved? Can you describe them?	Yes, the objective will be implemented through the RMA (through section 5), provisions for water allocation in the PNRP (policies, rules and other methods), and through resource consents. The WRC has a function to control the taking, using, damming or diverting of water through resource consents. These avenues give decision-makers a wide mandate to ensure the objective will be achieved.
What other parties can the Council realistically expect to influence to contribute to this outcome?	All other individuals and groups can be involved in the achievement of the objective, including: • All resource-users • Territorial authorities • Environmental and community groups • Landowners.
What risks have been identified in respect of outcomes?	The main risk to achieving the objective is proper and adequate description of the allocation regime in the PNRP. Another risk is managing allocation priorities when demand exceeds supply.
Reasonableness	
Does the objective seek an outcome that would have greater benefits environmentally, economically, or socially compared with the costs necessary to achieve it?	Yes – The allocation regime of the PNRP is sufficiently similar to the existing regime that there are few additional costs while the benefits of the new regime are greater. In particular the PNRP gives a high level of certainty through the limits it provides.
Who is likely to be most affected by achieving the objective and what are the implications for them?	All people and communities with an interest in using water in any way. The most immediate and direct interest lies with those people (e.g. resource consent holders) who use water on a daily basis.

Existing objectives	
Are the existing objectives still relevant or useful?	Current objectives in the RPS and the RFPare relevant to the allocation regime but they are not so specific as to adequately recognise and provide for it.

Table A4: Objective O52 – efficiency of water use (described in section 4.1.6)

Objective O52 The efficiency of allocation and use of water is improved and maximised through time, including by means of: (a) efficient infrastructure and application methods, and (b) good management practice, including irrigation, domestic municipal and industry practices, and (c) maximising reuse, recovery and recycling of water and contaminants, and (d) enabling water to be transferred between users, and (e) enabling water storage outside river beds.'	
Relevance	
Directly related to resource management issue?	Yes, this objective addresses Issue 2.
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, section 7(b) – the efficient use and development of natural and physical resources.
Relevant to Māori environmental issues?	Yes. Sections 6(e), 6(g), 7(a), 8.
Relevant to statutory functions or to give effect to another plan or policy?	NPS-FM includes Objective B3 to improve and maximise the efficient allocation and efficient use of water. It also includes two policies (B2 and B4 directing regional plans to include provisions for the efficient use of water. The RPS (Policy 20) directs regional plans to include policies rules and/or methods to promote the efficient allocation and use of water. It also requires particular regard to be had (Policy 44) to efficient use of water in resource consent applications.
Usefulness	
Will effectively guide decision-making?	This objective will guide how efficient use of water is addressed through policies and rules in the PNRP for discharges to land, discharges to water, and the taking, using, damming and diverting of water.

Meets sound principles for writing objectives?	This objective for improving efficient uses of water over time addresses a wide range of activities that include land use, discharges to land or water, and the taking, use, damming, or diversion of water.
Consistent with other objectives?	Tthe objectives work together and is consistent with other objectives to achieve the sustainable management of natural resources in the Wellington region.
Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measurable and how would its achievement be measured?	The objective will be measured by monitoring water quality and measuring the taking, using, damming and diversion of water.
Is it expected that the objective will be achieved within the life of the PNRP or is it an aspirational objective that will be achieved some time in the future?	This objective will be achieved in the life of the PNRP as a matter of gradual improvement that can be measured by monitoring water quality and water use, as above.
Does the Council have the powers, and policy tools to ensure that they can be achieved? Can you describe them?	Yes, WRC controls the taking and use of water and discharges to water and land. Requirements for resource consents are the main method by which the objective will be achieved. Opportunities for implementing non-regulatory approaches through incentives, education, public awareness, and promoting best practice are the other tool that WRC will use to achieve the objective.
What other parties can the Council realistically expect to influence to contribute to this outcome?	• All resource-users • Territorial authorities • Consent holders
What risks have been identified in respect of outcomes?	Measuring and reporting systems for water quantity must be integrated with those for water quality and aquatic ecosystems.
Reasonableness	
Does the objective seek an outcome that would have greater benefits environmentally, economically or socially compared with the costs necessary to achieve it?	Yes – the costs of improving efficiency relate in large part to machinery and infrastructure. Provided sufficient transition time is available for the replacement of machinery and infrastructure there will be greater environmental benefits than the costs necessary to achieve it. The main benefit is that more efficient use of water means more water is available for use by new and existing water users in catchments that are fully allocated.
Who is likely to be most affected by achieving the objective and what are the implications for them?	Benefits will accrue to consent holders by more water becoming available for use to new and existing water users in catchments that are fully allocated.

Existing objectives	
Are the existing objectives still relevant or useful?	An objective in the current RFP is that "water is used efficiently and water conservation is promoted". Such an objective is relevant but less useful than the one proposed because the new objective seeks improvement rather than allowing continued use of water at current levels of efficiency.

Table A5: Assessing the efficiency and effectiveness of alternative policies and methods – the framework for taking and using water (described in Section 6.1)

		Option 1 – status quo (no change from the RFP)	Option 2 – Amend the PNRP to include a policy setting out key elements of the framework for taking and using water
Costs Note: costs of implementing the allocation framework are also addressed in policies and rules associated with minimum flows and water levels (in Table A6) and core allocation (Table A8)	Council	Reduced certainty on the key elements of the regime for taking and using water and how the PNRP is giving effect to the NPS-FM	The costs of implementing the allocation regime are addressed in policies and rules associated with minimum flows and water levels (Table B2) and core allocation (Table B4)
	Resource user	Reduced certainty on key elements of the regime for taking and use of water and how key elements of the regime (groundwater/surface water interaction, existing use, allocation limits, minimum flows or water levels) will be applied in resource consents.	The costs of implementing the allocation regime are addressed in policies and rules associated with minimum flows and water levels (Table B2) and core allocation (Table B4)
	Community costs	Reduced certainty on key elements of the regime for taking and use of water and how key elements of the regime will be applied.	The costs of implementing the allocation regime are addressed in policies and rules associated with minimum flows and water levels (Table B2) and core allocation (Table B4)

		Option 1 – status quo (no change from the RFP)	Option 2 – Amend the PNRP to include a policy setting out key elements of the framework for taking and using water
Benefits Note: benefits of implementing the allocation regime are also addressed in policies and rules associated with minimum flows and water levels (Table A6) and core allocation (Table A8)	Council	The current approach of not identifying key elements of the regime for taking and using water is straight-forward to administer and staff are familiar with it.	Council staff processing resource consents will have clarity and certainty about key elements of the regime for taking and using water that must be addressed and managed in resource consent applications.
	Resource user	The current approach is straight-forward to administer and consent holders know how it works.	Resource consent applicants will have clarity and certainty about key elements of the regime for taking and using water that will be addressed in resource consent applications. Existing water users will have certainty that their use of water can continue. Recognising the connectivity of surface water and groundwater will ensure greater equity between groundwater and surface water users.
	Community benefits	No new benefits.	The community will have clarity and certainty about key elements of the regime for taking and using water that will be addressed in resource consent applications.
Efficiency and effectiveness		Less efficient and effective than the preferred option (Option 2) because there is uncertainty about whether key elements of the regime for taking and using water will apply with fewer benefits and greater costs (uncertainty) associated with maintaining the status quo now and into the future.	The policy interprets what is meant by "the framework for taking and using water" in the context of Objective O6. It will help ensure Objective O6 can be achieved by providing a clear and certain understanding of key elements of the regime for taking and using water that are managed in the PNRP. Such a transparent understanding will enhance its effectiveness by establishing how other related policies and rules are applied.
Risks of acting or not acting		The risk of not acting is that there will be uncertainty in the PNRP over how to interpret the regime for taking and using water and key elements of it's management.	
Appropriateness		Not appropriate because a better alternative (Option 2) is available.	Policy P107 is appropriate because there are no direct costs, and there are benefits associated with the policy that will assist with interpreting how the PNRP responds to every resource consent application made under its rules.

	Option 1 – status quo (no change from the RFP)	Option 2 – Amend the PNRP to include a policy setting out key elements of the framework for taking and using water
Conclusions	The benefits of the new policy setting out key elements of the regime for taking and using water (Option 2) outweigh the costs. Policy P107 is efficient and effective because of the certainty it provides to all water users and has no risk associated with it.	

Table A6: Assessing the efficiency and effectiveness of alternative policies and methods – minimum flows (described in section 6.2)

		Option 1 – Apply minimum flows identified in the RFP and default minimum flows in catchments not identified in the RFP	Option 2 – Update minimum flows for three rivers in the RFP where scientific work has been done that justifies different minimum flows
Costs	Council	Cost of processing that portion of a resource consent with a condition relating to minimum flows. Cost of enforcing the consent condition on minimum flow.	Cost of processing that portion of a resource consent with a condition relating to minimum flows. Cost of enforcing the consent condition on minimum flow
	Resource user	Portion of resource consent application cost relating to minimum flows. Cost associated with water not being available to most users below minimum flows.	Cost of resource consent application relating to minimum flows. Cost associated with water not being available below minimum flows. Applicants replacing existing resource consents have less water available from three rivers (Mangaone Stream, Ōtaki River, Waiohine River) using higher minimum flows based on new science evidence. Uncertainty in the immediate short term because whaitua committees may recommend different minimum flows in the long term using a full set of relevant catchment (or sub-catchment) evidence, including reliability of supply information that is not available at the present time but will be available when whaitua committees make their decisions.

		Option 1 – Apply minimum flows identified in the RFP and default minimum flows in catchments not identified in the RFP	Option 2 – Update minimum flows for three rivers in the RFP where scientific work has been done that justifies different minimum flows
	Community costs	No costs.	Uncertainty in the short term because whaitua committees may recommend different minimum flows in the long term using a full set of relevant catchment (or sub-catchment) evidence, including reliability of supply information that is not available at the present time but will be available when whaitua committees make their decisions.
Benefits	Council	No benefits.	No new benefits.
	Resource user	Certainty is provided to consent applicants that the status quo will continue in the immediate future.	Certainty is provided to consent applicants that the status quo will continue in the immediate future with the exception of Mangaone Stream, Otaki River, Waiohine River where the final minimum flow would remain uncertain until whaitua recommendations are made.
	Community benefits	Certainty is provided that the status quo will continue in the short term.	Certainty is provided to consent applicants that the status quo will continue in the short term with the exception of Mangaone Stream, Ōtaki River and Waiohine River where higher minimum flows would apply (potentially, at least until whaitua committees make recommendations that could amend minimum flows again). The final minimum flow in these three rivers would remain uncertain until whaitua recommendations are made.
Efficiency and Effectiveness		Applying current minimum flows from the RFP in the PNRP is the most effective and efficient way of achieving Objective O25 because it provides certainty without imposing additional costs on resource users and the community. Uncertainty would be created and additional costs imposed by changing minimum flows in three rivers now when further changes to minimum flows may be recommended by whaitua committees in the immediate future.	Amending minimum flows in three rivers based on new scientific information would be a partially effective way of achieving Objective O25. However, new minimum flows in three rivers would not necessarily be the minimum flow recommended by whaitua committees with a fuller set of information than is available at the present time. Whaitua committees must consider reliability of supply (not applied yet) in each catchment (or sub-catchment) before recommending minimum flows.

		Option 1 – Apply minimum flows identified in the RFP and default minimum flows in catchments not identified in the RFP	Option 2 – Update minimum flows for three rivers in the RFP where scientific work has been done that justifies different minimum flows
Risks of acting or not acting		There is little risk of retaining the status quo because RFP minimum flows and minimum flows based on current best practice are current "working" methods of assessing minimum flows. The risk of having no minimum flows or lake levels at all is that the integrity of aquatic ecosystems will be compromised and no progress will have been made on implementing the NPS-FM	The risk of establishing new minimum flows in the three rivers based on new scientific evidence because additional evidence on reliability of supply could change minimum flows again once a full set of evidence is considered on a catchment (and subcatchment basis) by whaitua committees.
Appropriateness		The status quo is appropriate because there are no new direct costs and benefits of providing certainty to all users until such time as recommendations on final minimum flows and water levels are considered by whaitua committees.	Less appropriate than the status quo (Option 1) because of costs and uncertainty created by potential repeated changes to minimum flows and water levels.
Conclusions		The benefits of retaining the status quo (Option 1) outweigh the costs and will be more efficient and effective than the alternative of creating short term uncertainty for all resource users.	

Table A7: Assessing the efficiency and effectiveness of alternative policies and methods – priorities in times of water shortage (described in section 6.3)

		Option 1 – status quo (no change from the Operative RFP).	**Option 2 – Amend the Proposed Plan with specific policies prioritising how water will be allocated when demand exceeds supply in the following situations:** • Flows and water levels are above minimums, and • Flows and water levels are below minimums.
Costs	Council	Uncertainty about priorities for water allocation when resource consent applications are made. Providing information to water users on real time river flows and lake levels.	Providing information to water users on real time river flows and lake levels.
	Resource user	Uncertainty about priorities for water allocation when applying for resource consents. Lack of direction may impact on business costs. Costs of providing alternative sources of water (e.g. storage)	Water may not be available for a low priority water user when water has already been allocated to higher priority use. Costs to industrial and food processing uses of water in community water supplies that do not have alternative water supplies and potentially will not be available at minimum flows
	Community costs	Uncertainty about priorities for water allocation when resource consent applications are made.	No costs.
Benefits	Council	No new benefits.	Greater clarity when administering resource consents about priorities for water allocation amongst users.
	Resource user	No new benefits.	Greater clarity for users about how priorities for allocation will be treated in resource consent applications. More Integrated management of groundwater and surface water means that all water users in the region will be treated equitably and the effects on surface water resources will be recognised

		Option 1 – status quo (no change from the Operative RFP).	**Option 2 – Amend the Proposed Plan with specific policies prioritising how water will be allocated when demand exceeds supply in the following situations:** • Flows and water levels are above minimums, and • Flows and water levels are below minimums.
	Community benefits	No benefits.	Greater clarity for users about how priorities for allocation will be treated in resource consent applications. More Integrated management of groundwater and surface water means that all water users in the region will be treated equitably and the effects on surface water resources will be recognised
Efficiency and effectiveness		The status quo is less efficient and effective than the proposed alternative because it has costs but no new benefits compared with Option 2.	Identifying specific water uses that have priority over other uses and ranking priorities will lead to greater transparency and certainty about how water should be allocated when demand for water exceeds supply. The approach of having specific policies in the PNRP that determine priorities for allocation will lead to a more efficient and effective achievement of Plan objectives than provisions in the RFP.
Risks of acting or not acting		See Option 2.	The risk of not having provisions identifying priorities is there will be uncertainty when resource consents are processed over how to allocate water to competing uses when demand exceeds supply or when minimum flows are reached. Water may be granted to a low priority when there are competing high and low priority water uses.
Appropriateness		See option 2.	The new provisions are appropriate because they will ensure that water goes to high priority uses versus low priority uses at times of water shortage, thereby improving the efficiency and effectiveness of the Proposed Plan's ability to respond to resource consent applications to take water.
Conclusions		The benefits of new provisions prioritising water use outweigh the costs and will be more efficient and effective than the alternative of having no such policies and creating uncertainty for all resource users.	

Table A8: Assessing the efficiency and effectiveness of alternative policies and methods – core allocation (described in section 6.4)

		Option 1 – status quo (no change from RFP – core allocation only applies in identified catchments).	**Option 2 – Allocate water according to whichever is the greater of existing uses and default allocation limits that apply to all catchments in the region.**
Costs	Council	Some catchments do not have core allocation amounts, so any limit could be challenged on a case by case basis if it is not in the PNRP. Implementing the NPS-FM requires the taking and use of water to be accounted for	Implementing the NPS-FM requires the taking and use of water to be accounted for
	Resource user	Costs associated with getting discretionary activity resource consents Water not available to new users in fully allocated catchments. Uncertainty about how core allocation will be treated when it is exceeded Uncertainty about the application of core allocation in catchments with no core allocation amounts identified.	Costs associated with resource consents, including restricted discretionary activity resource consents (less than Option 1). Water not available to new users in fully allocated catchments.
	Community costs	No costs in catchments with core allocation amounts. Uncertainty in catchments with no core allocation amounts.	No costs because changes to allocation amounts are small.
Benefits	Council	Certainty in processing many resource consents.	Certainty in processing all resource consents. Consented water take and use is accounted for.
	Resource user	Certainty in processing many resource consents.	Certainty in processing all resource consents. Existing users can retain water that is currently consented.

		Option 1 – status quo (no change from RFP – core allocation only applies in identified catchments).	Option 2 – Allocate water according to whichever is the greater of existing uses and default allocation limits that apply to all catchments in the region.
	Community benefits	Certainty in processing many resource consents.	Certainty in processing all resource consents. Consented water take and use is accounted for.
Efficiency and effectiveness		Will only partially achieve the objective because core allocation is not identified in some parts of the Ruamāhanga Whaitua, Wellington and Hutt Valley Whaitua, and Kāpiti Coast Whaitua, which are the areas where water use is most under stress in the region.	The most efficient and effective approach to achieving the objective. There are no new costs to existing users and it provides certainty to WRC, resource consent applicants and the community on how much water can be allocated in every catchment across the region until such time as whaitua committees make final recommendations on allocation limits on a catchment (or sub-catchment) basis.
Risks of acting or not acting		The risk is that uncertainty would remain in some catchments in the region on how much water can be allocated.	The main risk is that default allocation limits are based on region-wide numerical limits that do not address reliability of supply on a catchment (or sub-catchment) basis. Assessing reliability of supply on such a basis will be done by whaitua committees who will make recommendations on final allocation limits. The risk of having no core allocation at all is that the amounts of water available to be taken and used in the region would be unmanaged and the integrity of aquatic ecosystems compromised (they will not be safeguarded).
Appropriateness		The status quo is not appropriate because it does not establish allocation amounts in all catchments in the region. There are costs and uncertainty associated with allocating in catchments that do not have a core allocation.	The new provisions are appropriate at this time. There are no direct financial costs associated with the core allocation framework introduced. Existing take and use of water can continue (subject to efficient use). It is the most effective option in the present circumstances when final allocation limits using a full set of information on security of supply have yet to be assessed by whaitua committees. It is an interim approach that allows whaitua committees to recommend final allocation limits based on catchment (and sub-catchment) reliability of supply.

		Option 1 – status quo (no change from RFP – core allocation only applies in identified catchments).	Option 2 – Allocate water according to whichever is the greater of existing uses and default allocation limits that apply to all catchments in the region.
Conclusions		The benefits of providing allocation policy that addresses allocation limits in all catchments in the region outweighs the costs and will be the most efficient and effective approach that leads to final allocation limits being recommended in the future by whaitua committees.	

Table A9: Assessing the efficiency and effectiveness of alternative policies and methods – supplementary allocation (described in section 6.5)

		Option 1 – status quo (no change from RFP – supplementary allocation is identified for some catchments only)	Option 2 – Allocate water above median flows in all catchments through: • a restricted discretionary activity rule providing for flushing flows and maintaining some river flow • a discretionary activity rule requiring an applicant to demonstrate how the river would respond.
Costs	Council	Many catchments do not have supplementary allocation amounts that can be applied, so any arbitrary supplementary allocation amount could be challenged on a case by case basis if it is not in the proposed Plan. Costs associated with processing discretionary activity resource consents	Costs associated with processing resource consents, including restricted discretionary activity resource consents (less than Option 1).

		Option 1 – status quo (no change from RFP – supplementary allocation is identified for some catchments only)	**Option 2 – Allocate water above median flows in all catchments through:** • a restricted discretionary activity rule providing for flushing flows and maintaining some river flow • a discretionary activity rule requiring an applicant to demonstrate how the river would respond.
	Resource user	Uncertainty about how the proposed Plan applies at greater than median river flows in rivers where supplementary allocation amounts are not identified Costs associated with resource consent application through a discretionary activity rule following assessment of suitable flushing flows and effects on river ecology.	Costs associated with a resource consent application (fifty percent of water above median flow is readily available through a restricted discretionary activity rule, while greater amounts of water are also available through a discretionary activity rule following assessment of suitable flushing flows and effects on river ecology).
	Community costs	Lack of certainty about the amount of water that can be allocated at high flows in rivers without a supplementary allocation framework.	No costs
Benefits	Council	No new benefits.	Greater certainty in processing resource consents, particularly those made under a restricted discretionary activity rule.
	Resource user	No new benefits.	The use of water above median flows is promoted through the application of criteria in a restricted discretionary activity rule that enables the taking of water without further environmental assessment.
	Community benefits	No new benefits.	No undue adverse effects on the environment.

		Option 1 – status quo (no change from RFP – supplementary allocation is identified for some catchments only)	Option 2 – Allocate water above median flows in all catchments through: • a restricted discretionary activity rule providing for flushing flows and maintaining some river flow • a discretionary activity rule requiring an applicant to demonstrate how the river would respond.
Efficiency and Effectiveness		Supplementary water is partially provided for through plan provisions (a discretionary activity rule applies) but the option is not the most efficient or effective in rivers that do not have supplementary allocation limits.	The most efficient and effective approach to achieving the objective because there are no new costs, and taking water is promoted above median river flows without having adverse environmental effects through the application of criteria in a restricted discretionary activity rule (otherwise a discretionary activity rule applies).
Risks [of acting or not acting]		The risk of not acting is that uncertainty would remain in some catchments about how much water is available above median river flows.	Minimal risks.
Appropriateness		The status quo is not appropriate because it does not establish allocation amounts in many catchments in the region. There are costs and uncertainty associated with allocating water in catchments that do not have limits.	The new provisions are appropriate at this time because there are no additional costs (compared with option 1) associated with the introduction of a restricted discretionary rule to take water above the median flow. It is the more cost effective than option 1 and will promote the taking and use of water without additional environmental effects or risk.
Conclusions		The benefits of providing policy that addresses supplementary allocation in all catchments in the region outweighs the costs of not doing so and will be the most efficient and effective approach.	

Table A10: Assessing the efficiency and effectiveness of alternative policies and methods – efficiency of water use (described in section 6.6)

		Option 1 – status quo (no change from the RFP)	**Option 2 – Amend the PNRP with policies that require consideration of efficient use in resource consents and enable the transfer of water permits**
Costs	Council	Meeting efficient allocation and use requirements of the NPS-FM will be difficult and costly to meet without specific policies in the PNRP.	Administrative cost associated with considering material relating to efficient use of water in resource consent applications.
	Resource user	The cost of continued inefficient use of water, wasting the resource and making it less available for other people to use into the future.	Cost of infrastructure that delivers efficient water use Cost of assessing efficient water use in resource consent applications, costs associated with consent monitoring
	Community costs	The cost of continued inefficient use of water, wasting the resource and making it less available into the future. Costs associated with meeting the NPS-FM, accounting, will have to be meet partially through rates.	No new costs.
Benefits	Council	No new benefits.	Council staff processing resource consents have greater clarity and certainty about elements of efficient use of water that are to be considered in resource consent applications.
	Resource user	No new benefits.	Resource consent applicants have greater clarity and certainty about elements of efficient use of water that are to be considered in resource consent applications. Cost savings associated with taking and using less water (pumping, distributing and delivering) for the same level of production. More efficient use of water in fully allocated catchments will release water that can be made available to other water uses.
	Community benefits	No new benefits.	The community will benefit from more water being available, including to a greater number of uses and users.

		Option 1 – status quo (no change from the RFP)	Option 2 – Amend the PNRP with policies that require consideration of efficient use in resource consents and enable the transfer of water permits
Efficiency and Effectiveness		Less efficient and effective than the proposed approach because of costs associated with less efficient uses of water.	Greater social, economic and environmental benefit of taking, using, damming, or diverting water occur when more water becomes available in places where, and at times when, the demand for water exceeds supply. More efficient use of water in fully allocated catchments will lead to more water becoming available for other uses.
Risks of acting or not acting		No improvement in efficiency of water use. Effect is not given to the NPS-FM	The risk of not acting is that current practice would continue and there would be no improvements in the efficiency of water use.
Appropriateness		This option is not appropriate because it relies entirely on efficiency improvements being delivered without any regulation.	The new policies and rules directed at more efficient use of water are appropriate because they will give effect to NPS-FM requirements for water use efficiency. In particular regulatory approaches to delivering efficiency of water use will complement non-regulatory approaches and lead to greater consideration of efficient water use in circumstances where (and when) the water resource is fully allocated.
Conclusions		The benefits of provisions promoting more efficient use of water outweigh the costs and will lead to more efficient use of water.	

Table A11: Assessing the efficiency and effectiveness of alternative policies and methods – managing adverse effects (described in Section 6.7)

		Option 1 – status quo (no change from the RFP).	**Option 2 – Amend the PNRP to reflect the development of practice since 2000.**
Costs	Council	Little change in costs but some uncertainty about what is expected and required into the future.	Little change in costs but greater certainty about what is expected and required into the future.
	Resource user	Little change in costs but some uncertainty about what is expected and required.	Little change in costs but greater certainty about what is expected and required.
	Community costs	Little change in costs but some uncertainty about what is expected and required.	Little change in costs but greater certainty about what is expected and required.
Benefits	Council	No new benefits.	Council staff processing resource consents will have greater clarity and certainty about the matters that must be avoided, remedied or mitigated in resource consent applications.
	Resource user	No new benefits.	Resource consent applicants will have clarity and certainty about the matters that must be avoided, remedied or mitigated in resource consent applications
	Community benefits	No new benefits.	The community will have clarity and certainty about the matters that must be avoided, remedied or mitigated in resource consent applications
Efficiency and effectiveness		Relying on the status quo would not recognise changes in practice and knowledge that have occurred since the RFP was made operative.	These provisions of the PNRP update knowledge and practice from what was expected and required in 2000. Costs are small but overall significant benefits will arise such that the new provisions will achieve PNRP objectives more efficiently and effectively than provisions in the current RFP.

		Option 1 – status quo (no change from the RFP).	Option 2 – Amend the PNRP to reflect the development of practice since 2000.
Risks of acting or not acting		The risk of not acting is that practice will not be updated and sustainable management will not be achieved in the most efficient and effective way. The risk of not acting is that practice will not formally be updated and sustainable management will not be achieved in the most efficient and effective way.	
Appropriateness		This option is not appropriate because it ignores gains made through improved knowledge and practices.	Updated provisions are appropriate because the benefits of ensuring current practice is reflected in the PNRP outweighs the costs or not doing so.
Conclusions		The amended provisions are more effective and efficient than currently apply and provide greater certainty to all users.	

The Greater Wellington Regional Council's purpose is to enrich life in the Wellington Region by building resilient, connected and prosperous communities, protecting and enhancing our natural assets, and inspiring pride in what makes us unique

For more information contact the Greater Wellington Regional Council:

Wellington office
PO Box 11646
Manners Street
Wellington 6142

T 04 384 5708
F 04 385 6960
www.gw.govt.nz/rps

Upper Hutt office
PO Box 40847
Upper Hutt 5018

T 04 526 4133
F 04 526 4171

Wairarapa office
PO Box 41
Masterton 5840

T 06 378 2484
F 06 378 2146

info@gw.govt.nz
www.gw.govt.nz
regionalplan@gw.govt.nz

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