Section 32 report:
Water quality

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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Section 32 report: Water quality

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1. Overview and purpose

This report provides an analysis of the appropriateness of the proposed objectives for the integrated management of water quality outcomes, and their links to the other relevant objectives, policies and methods contained in the proposed Natural Resources Plan (proposed Plan). Because the proposed Plan integrates all natural resource matters that are Wellington Regional Council's responsibility, water quality in this report refers to both fresh water and coastal water. The analysis in this report is guided by the requirements of section 32 of the Resource Management Act 1991.

This report focuses on proposed Objectives O23, O24 and O25, which are to maintain or improve fresh and coastal water quality, including providing for contact recreation and Māori customary use, and safeguarding aquatic ecosystem health and mahinga kai. The report describes how these objectives will be implemented through the use of four key land and water policies (Policies P61, P63, P65 and P66) that provide an overarching framework for the management of land and water and a range of other regulatory and non-regulatory provisions in the proposed Plan.

This evaluation report should be read in conjunction with the report, "Introduction to the Resource Management Act 1991 Section 32 reports" to understand the context and approach undertaken in the development of the proposed Plan.

1.1 Legislative background

The Wellington Regional Council's (WRC) approach to the integrated management of land and water is guided by the Resource Management Act 1991 (RMA), the National Policy Statement for Freshwater Management 2014 (NPS-FM), the New Zealand Coastal Policy Statement 2010 (NZCPS), and the Regional Policy Statement for the Wellington region (RPS).

1.2 Report methodology

In assessing the appropriateness of the proposed provisions, the report contains a high level analysis of the costs and benefits of the proposed policies, rules and methods that seek to achieve the objectives in the proposed Plan for fresh and coastal water quality.

For more in-depth assessments on specific resource management matters, please see the following section 32 evaluation reports for the proposed Plan:

- Ki uta ki tai – mountains to the sea
- Māori values
- Aquatic ecosystems
- Discharges to water
- Discharges to land

- Water quantity
- Soil conservation
- Livestock access, cultivation and break-feeding
- Recreation, public access and open space
- Beds of lakes and rivers

The report is structured as follows:

- *Resource management issues*: the main issues identified by the community related to the integrated management of fresh and coastal water quality (section 2 of this report)
- *Regulatory and policy context*: identification of relevant national and regional legislation and policy direction (section 3 of this report)
- *Appropriateness of the proposed 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 s32(1)(a) of the RMA (section 4 of this report)
- *Refining the water quality issues*: identification of fresh and coastal water bodies not meeting the expectations of the proposed objectives (section 5 of this report)
- *Efficiency and effectiveness of the policies, rules and methods*: an assessment of the efficiency and effectiveness of the provisions as to whether they are the most appropriate way to achieve the objectives, in accordance with s32(1)(b) and s32(2) of the RMA (section 6 of this report)

2. Resource management issues

The WRC has identified five major resource management issues relating to managing water quality to provide for contact recreation and Māori customary use and to safeguard aquatic ecosystem health and mahinga kai. These issues were identified through a region-wide engagement process with the regional community in 2010.

The engagement process collected the views of the community on natural resource management and helped define the issues that the proposed Plan would address. The process, documented in Parminter (2010), involved conversations with iwi partner organisations, the general public, agencies and organisations with interests in resource management, resource users, school children, developers and policy-makers.

Parminter's (2011) analysis identified a range of goals for water quality held by the regional community, including that people wished for waterways to be suitable for swimming, safe for food gathering and that they provide good habitat for aquatic species. The report further identified that being able to

touch, play and interact with water while remaining healthy was important to the regional community.

A subsequent review of the community-wide engagement work further 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" (GWRC 2013a, p1).

2.1 Water quality issues

The issues identified from the regional engagement were articulated in a report supporting the draft Natural Resources Plan (GWRC 2014a) (note that the issue numbers below relate to those used in the 2014 issues report). The issues relevant to this report are detailed below.

2.1.1 Issue 1.1

Land, fresh water and the coast are valued for a variety of reasons and are under pressure from multiple, and sometimes competing, uses and developments which are having a cumulative adverse effect on the health and function of fresh water and coastal resources.

Explanation

The quality of water bodies deteriorates as water flows from the mountains to the sea. Land use, discharges, water takes and modifications to rivers, lakes and wetlands all contribute to pollution and a reduction in the natural values of the water bodies and, finally, the coast. The lower reaches of rivers, estuaries and harbours are under the greatest threat from catchment activities because of the cumulative effects in these areas.

2.1.2 Issue 1.2

The lower reaches of rivers, lakes, estuaries and harbours are places where there is an accumulation of adverse effects of human activities on land, in water bodies and on the coast.

Explanation

Low energy coastal and freshwater environments include the lower reaches of rivers, lakes, estuaries and harbours. These areas are adversely affected by such activities as sedimentation rates, land development, and pollution from nutrients and heavy metals from upstream catchments. Over time, the accumulation of adverse effects can lead to the degradation of the mauri and the ecosystems of such fresh water and coastal environments.

Many of the region's low energy environments are under threat from use and development within their catchments. Places like the Ōtaki and Waikanae river mouths, Wellington Harbour (Port Nicholson), Te Awarua-o-Porirua Harbour and Lake Onoke are highly valued. It is vitally important that the amenity and natural values of these resources are retained for the health and well-being of communities.

Some low energy environments in the region have been degraded to the extent that improvement is needed as a priority. Te Awarua-o-Porirua Harbour is one such example. Pollutants from roads, stormwater and sewage systems foul the Onepoto Arm. Sediment runoff is increasing with earthworks and associated urban development. Modifications to the harbour edge and streams have resulted in the loss of intertidal spawning, nursery and feeding grounds for marine life. Many shellfish beds are contaminated and unsuitable for eating. Recreational activities such as swimming, waka ama, sailing, rowing, kayaking, windsurfing, rowing and speed-boating are also affected by the excessive build-up of sediment in the harbour and poor water quality. Future development, such as the Transmission Gully motorway, forest harvesting, wind farm development, and Porirua City's own growth within Te Awarua-o-Porirua Harbour catchment could further affect the health of the harbour. All of Wellington City's greenfield development up to 2030 will occur in the Te Awarua-o-Porirua Harbour catchment.

The natural values of Lake Wairarapa have also declined significantly from their original state following the development of surrounding land for agricultural production and the diversion of the Ruamāhanga River around Lake Wairarapa in the 1960s as part of the Lower Wairarapa Valley Development Scheme. The water quality of Lake Wairarapa is poor and is described as supertrophic (Perrie and Milne 2012) – meaning that it has very high levels of nutrients, and at times algal blooms. Nutrients and sediment accumulate in the lake from erosion, land use, and discharges in the catchment including wastewater from the town of Featherston. The allocation of surface and ground water that flow to Lake Wairarapa has increased in recent years and it is now fully allocated. The balance of fish species has shifted with indigenous species now threatened by an increasing abundance of exotic fish.

2.1.3 Issue 4.1

The ecosystem health and function of water bodies is being degraded by contaminated discharges from urban and rural land use, and the abstraction of water.

Explanation

Routine monitoring shows that the health of rivers, streams, lakes, wetlands, groundwater and estuaries in the Wellington Region is degraded by rural and urban land use, particularly in intensively farmed or urban catchments.

Rivers and streams are impacted by non-point sources of nutrients, sediment, organic matter and toxicants from activities on the land, which cause deterioration in water quality. Increased nutrients cause unwanted algal growth which changes the habitat of fresh water fish and invertebrates, and increases the habitat's susceptibility to invasion by pest plants and fish. Increased sediments reduce water clarity, light penetration for plant growth, and can change the nature of stream beds where native fish and invertebrates live, spawn and feed. Toxicants can be fatal in high concentrations, and in lower concentrations can affect the health and reproductive ability of aquatic life. Increased organic inputs can result in low dissolved oxygen and high ammonia concentrations which are toxic to aquatic life.

The abstraction of water can reduce the dilution of these contaminants, and reduce the health and function and extent of wetlands. Controlled river flows and levels can impact on the amount of habitat available and the seasonal peaks and troughs that ecosystems are adapted to.

The introduction of pest plants and animals puts further stress on our ecosystems. Some fresh water ecosystems, including Wairarapa Moana (the lake and its surrounding wetlands), are seriously ecologically degraded. Once the water quality of groundwater and lakes are compromised, they are very difficult to rehabilitate or restore.

2.1.4 Issue 4.3

Land uses and discharges of contaminants reduce the quality of water bodies.

Explanation

The water quality of rivers, lakes, wetlands and aquifers deteriorates as water flows from the mountains to the sea. Generally, the quality of water bodies in upper catchments is high and declines as water flows downstream into modified parts of catchments where discharges and land use contribute to pollution. 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, water quality in water bodies with outstanding values should be maintained.

A sufficient amount of high quality drinking water is needed for the health of communities. Over 85% of the region's population has access to community drinking water supplies. These supplies of relatively high quality fresh water are fundamental to the health and well-being of communities.

Other purposes that water bodies are valued for include: aquatic ecosystems; mahinga kai and customary purposes; places, sites and areas with spiritual, cultural or historic heritage including, tauranga waka, taonga raranga, wāhi tapu, wāhi tipuna and urupā; drinking and washing water; animal drinking water; firefighting; electricity generation; commercial and industrial processes; irrigation; amenity and recreational activities; food production and harvesting; transport and access; cleaning; and dilution and disposal of waste.

Some rivers and lakes are no longer suitable for swimming or other forms of contact recreation and can no longer be used for customary uses such as mahinga kai. The ecosystems of some water bodies in the region have also changed to the extent that they now lie outside their range of natural variability. Livestock also need access to suitable drinking water quality that is no longer met in some water bodies. The quality of these water bodies is not being managed sustainably and the amount of contaminants getting into them needs to be reduced.

2.1.5 Issue 6.3

Land uses and discharges of contaminants reduce the quality of coastal water.

Explanation

Discharges of stormwater, sewage, sediment and other contaminants to the coast are adversely affecting the health of coastal ecosystems and the suitability of coastal water for recreation and shellfish gathering, mauri and amenity. The coastal marine area is the final receiving environment for contaminants carried in streams and stormwater from rural and urban land uses. In addition, there are four discharges of treated sewage effluent from the region's four main cities (Wellington, Porirua, Hutt City and Upper Hutt), numerous sewage 'overflow' discharges and other minor discharges.

Sediment from earthworks is affecting coastal water quality and shellfish beds, and stormwater sediments contaminated with heavy metals and other toxic substances are building up on the sea beds of the Wellington Harbour (Port Nicholson) and Te Awarua-o-Porirua Harbour to levels that could adversely affect aquatic life. High levels of microbial contamination in sewage and stormwater discharges can make coastal water unsuitable for swimming and could transmit diseases to marine mammals.

2.2 Trends and pressures

Trends in water quality in the Wellington Region can identify how resource use pressures may affect water quality outcomes into the future. Long-term monitoring shows that water quality trends remain relatively steady across the Wellington Region (Perrie et al. 2012). The Land Air Water Aotearoa data indicates that water quality in fresh water bodies the Wellington Region is in general above average for bacteria, clarity, nitrogen, phosphorus and pH water quality parameters compared to similar water bodies around the country.[1]

Although the region is trending well compared to other regions, there are still concerns about absolute measures of contaminants in the region's fresh and coastal water as stated above in Section 2. While trends indicate that water quality is not deteriorating rapidly, it is clear that a number of areas with relatively poor water quality are not improving and some water bodies are in a poor state. The most recent state of the environment reporting for fresh water shows that water quality in some rivers is improving, but in general aquatic ecosystem health in rivers is declining (Perrie et al. 2012). Some fresh water ecosystems, including Wairarapa Moana, are considered to be ecologically degraded.

Over the past twenty years, the agricultural areas of the Wellington Region has had low rates of conversion to more intensive agricultural land uses. Data from DairyNZ shows that between 2007 and 2014 the Wellington Region saw an increase in land area in dairy production of only 3%.[2]

[1] See http://www.lawa.org.nz/explore-data/wellington-region/freshwater/.
[2] Data taken from the DairyNZ and LIC annual dairy statistics reports 2007-2014, available from http://www.dairynz.co.nz/publications/dairy-industry/

A recent report from the Parliamentary Commissioner for the Environment (PCE 2015) illustrates how the Wellington Region has not undergone the same degree of agricultural land use change to dairying seen recently in a number of other regions (see Figure 1 below).

In the Wellington Region, the average rate of land use conversion to dairying, as measured by change in the area under production, was 0.2% per year over the 14 year period to 2014 (Infometrics 2014a). The national trend indicates an increase in the expansion of dairying of 2% per year over the same 14 year period (Infometrics 2014a).

Region	Sheep / Beef	Dairy	Plantation Forestry	Scrub
Northland	-3,900	5,500	-900	300
Auckland	-2,000	400	-100	1,800
Waikato	-7,500	28,400	-18,700	1,400
Bay of Plenty	1,100	2,800	-4,300	-400
Gisborne	-14,000	200	6,000	7,000
Hawke's Bay	-7,400	2,000	1,400	3,400
Taranaki	-1,100	4,600	2,500	-2,200
Manawatu-Wanganui	-9,300	6,200	3,200	1,800
Wellington	-4,400	200	3,400	-200
Nelson and Tasman	1,700	200	-1,000	1,100
Marlborough	-1,900	400	1,400	600
West Coast	200	5,100	-2,500	-1,500
Canterbury	-50,100	50,200	-4,200	-1,000
Otago	-17,400	12,700	2,400	-600
Southland	-35,700	38,900	1,700	-5,000
New Zealand	**-151,700**	**157,900**	**-9,600**	**6,600**

Figure 1: Actual changes in land use between 2008 and 2012 (rounded to the nearest 100 hectares). Sourced from Table 3.1, PCE (2015)

A number of factors are likely to have influenced this relatively slow rate of expansion of more intensive land uses across the Wellington region, including:

- A relatively low rate of population growth, at an annual average of 1% over the period 2000-14 (Infometrics 2014b)
- Limits on the availability of readily accessible water for expanded irrigation and rural production intensification in general across the region (Thompson and Mzila 2014)
- An increase of peri-urban and rural lifestyle development, particularly in the Ruamāhanga valley and Kāpiti Coast

However, changes in the intensity of land use practices within existing farming systems in the Wellington Region is more likely to be consistent with national trends. As an example, dairy production intensity, as measured by milk solids

production per hectare, showed an average annual increase of 1.5% for the period between 2002 to 2014 (Infometrics 2014a). Nationally, the increase was 2.3% for the same period (Infometrics 2014a).

Dairy NZ data shows that while in the Wellington Region there was only a small increase in dairy cow numbers (7%) and land area in dairy production (3%), between 2007 and 2014, the total milk solids production increased by nearly 25% .[3] Comparing data between regions, some regions (e.g., Canterbury and Southland) have seen steep increases in milk solids production compared to other regions, including Wellington and Tasman (see Figure 2). Therefore, for the Wellington Region, any increased nutrient loss to water from pastoral land use are likely to be associated with changes in the intensity of existing land use practices, rather than conversion to new land uses.

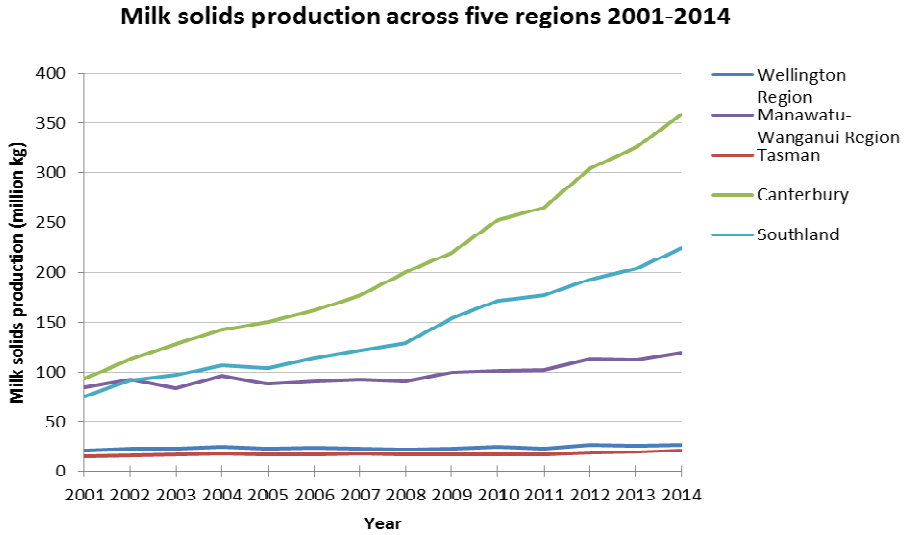

Figure 2: Milk solids production across five regions in New Zealand 2001-2014[4]

2.2.1 Summary

Overall, water quality in the Wellington Region has been steady or improving over the past ten years, but some fresh and coastal water systems exhibit degraded ecosystem health, community, cultural or social values. A number of catchments and water bodies show water quality impacts associated with past or current land use practices. It is likely that multiple activities and more than one contaminant contribute to poor water quality. Water quality issues are likely to be caused by a combination of legacy uses, current land management practices and interactions with other waterways.

The following sections examine the context within which the proposed Plan must respond to these issues (section 3). The report then sets out the proposed Plan objectives for water quality and how they are appropriate for addressing these issues (section 4). Section 5 refines the water quality issues by examining how the region's water bodies compare to the proposed Plan objectives

[3] Data taken from the DairyNZ and LIC annual dairy statistics reports, available from http://www.dairynz.co.nz/publications/dairy-industry/
[4] See the DairyNZ and LIC annual dairy statistics reports, available from http://www.dairynz.co.nz/publications/dairy-industry/

identified as appropriate in section 4. Section 6 identifies the proposed policies, rules and methods of the proposed Plan that will give effect to these objectives and provides an analysis of their efficiency and effectiveness.

3. Regulatory and policy context

3.1 National level

While the proposed Plan brings together the management of fresh and coastal water into an integrated set of provisions, it is important to recognise the different statutory directions for fresh water management (under the NPS-FM) from that of coastal water (under the NZCPS). Sections 3.1.2 and 3.1 set out the statutory tests for the two environments, summarise the key directions of each and the differences against which the proposed Plan provisions are assessed in section 4 of this report.

3.1.1 Resource Management Act 1991

Section 5 of the RMA identifies water and soil quality as important resources that must be safeguarded for their life-supporting capacity. Section 5(2)(a) directs the sustainable management of the use and development of natural resources while sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations. Section 5(2)(b) identifies water and ecosystems as important resources to be safeguarded for their life-supporting capacity. These are two key directions for the management of fresh and coastal water quality.

Section 6 of the RMA requires that WRC recognises and provides for identified matters of national importance. Most relevant to this section 32 evaluation report are s6(a) to preserve the natural character of the coastal environment, wetlands, and lakes and rivers and their margins, and s6(e) relating to the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga. Section 7 of the Act identifies important matters relevant to determining the appropriateness of the proposed Plan provisions, particularly s7(f) to maintain or enhance the quality of the environment.

Section 30 of the RMA gives WRC the ability to control discharges to water and land (s30(1)(f)) and the management of land (s30(1)(c)) and beds of lakes and rivers (s30(1)(g)(ii)) for the maintenance and enhancement of water quality. Sections 9, 12, 13, 14 and 15 of the RMA are all relevant to managing activities that impact on water quality and values of water.

3.1.2 National Policy Statement for Freshwater Management 2014

The NPS-FM sets out objectives and policies for the management of fresh water through an objective and limits setting process. Under section 67(3)(a) of the RMA, WRC must give effect to the NPS-FM, although the NPS-FM itself does not need to be implemented immediately, rather it sets a deadline of 31 December 2025 for implementation, under Policy E1(b).

The NPS-FM is of particular relevance to this evaluation report as it supports improved fresh water management in New Zealand by directing regional

councils to establish objectives and set limits for fresh water in their regional plans and provides specific direction on how this should be done.

Two key objectives of the NPS-FM are that fresh water is managed to safeguard ecosystem health and the health of people and communities from secondary contact with water, and that overall water quality within a region is maintained or improved. The NPS-FM sets national bottom lines for the two compulsory values (ecosystem health and secondary contact with water) and minimum acceptable states for other national values. The NPS-FM acknowledges iwi and community values by recognising the range of iwi and community interests in fresh water, including environmental, social, economic and cultural values.

Objective A2 of the NPS-FM is to maintain or improve the quality of all fresh water in a region. It is supported by Policies A1, A2, A3 and A4 in the NPS-FM. WRC will principally address the task of setting freshwater objectives and limits for water quality (as directed by NPS-FM Policies A1 and CA2) through the use of whaitua committees, a catchment-specific, community collaborative process. This method is described in the WRC's timetable for the progressive implementation of the NPS-FM (GWRC 2015b), as is required by Policy E1(c) for councils taking a progressive approach to implementing the NPS-FM by 2025.

Each whaitua committee will make recommendations in a whaitua implementation programme (WIP) for freshwater and coastal water objectives and limits specific to their whaitua which WRC will subsequently consider for incorporation into the regional plan by whaitua-specific variation or plan change. Each of these variations or plan changes will be assessed under the requirements of section 32 at the time of public notification. This task is set out in the terms of reference of each whaitua committee (GWRC 2013b, GWRC 2014b). The whaitua process commenced in the Ruamāhanga catchment in December 2013 and will be progressively rolled out around the region over the five years to 2019 (see Table 1).

Table 1: Approximate whaitua committee commencement and completion dates

Whaitua	Commencement	WIP completed
Ruamāhanga	December 2013	February 2016
Te Awarua-o-Porirua	January 2015	February 2017
Wellington Harbour and Hutt Valley	2015	2017
Kāpiti Coast	2016	2018
Wairarapa Coast	2017	2019

Consequently, the proposed Plan is the first step on a two-stage process to implement the NPS-FM in full by 2022. The proposed Plan does not fully implement the NPS-FM, such as Objective CA1 to establish freshwater objectives and set limits to meet these for national and regional values. In the interim, the proposed Plan must be consistent with the NPS-FM, most

particularly for this report topic, with regard to Objective A2 of the NPS-FM, which is to maintain or improve water quality overall within a region.

Under Policy CA2, regional councils are required to set objectives for all compulsory values in the NPS-FM for defined freshwater management units, from which limits can be set. Though the proposed objectives considered in this report sometimes use language similar to that used in NPS-FM and most particularly, the National Objectives Framework (NOF) of the NPS-FM, the proposed Plan does not implement Policy CA2.

The NPS-FM also requires regional councils to have regard to the connections between fresh and coastal water bodies when setting freshwater objectives (Objective A2) and to improve integrated management of fresh water such as the interaction between fresh water, land and coast water (Objective C1). These principles are reflected in the ki uta ki tai (mountains to the sea) approach of the proposed Plan, as set out by proposed Objective O1.

3.1.3 New Zealand Coastal Policy Statement 2010

The NZCPS provides direction to the proposed Plan that has particular relevance to management provisions that can impact on water quality. The NZCPS, issued under section 56 of the RMA, contains policies to achieve the purpose of the RMA in relation to the coastal environment. This includes policy direction on national priorities for the preservation of the natural character, protection of the characteristics of the coastal environment of special value to the tangata whenua, and activities involving the subdivision, use, or development of areas of the coastal environment. Under section 67(3)(b) of the Act, a regional plan must give effect to the NZCPS.

Unlike the NPS-FM, the NZCPS does not set out a specific process to be followed to manage coastal water quality. Instead it provides direction to maintain and enhance water quality (Objective 1) and to provide for integrated management of the coastal environment, including where land uses affect coastal water quality (Policy 4).

Specific direction on improving water quality is given in Policy 21 of the NZCPS. In particular, this policy directs that water quality that has deteriorated so that there are significant adverse effects on ecosystem health or recreation activities or other existing uses of water is prioritised for improvement. The policy then directs specific tasks to regional plans, including identifying such areas for improvement (Policy 21(a)) and including provisions for their improvement (Policy 21(b)). Policy 21 directs in (c) that, where practicable, water quality needs to be improved to a state that at least supports such recreational and existing uses of water and supports ecosystem health. Finally, the policy provides a specific direction on the management of stock access to water (Policy 21(d)) and that tangata whenua should be engaged in identifying values and ways to remediating or mitigating adverse effects on these areas (Policy 21(e)).

Further specific direction on managing land use and discharge activities that impact on water quality is provided by Policies 22 (sedimentation) and 23 (discharge of contaminants, including stormwater and wastewater). These

policies are considered in detail in the reports, "Section 32 report: Discharges to water" and "Section 32 report: Earthworks, vegetation clearance and plantation forestry".

3.2 Regional level

3.2.1 Regional Policy Statement for the Wellington Region

Under section 67(3)(c) of the Act, a regional plan must give effect to the relevant regional policy statement. The Regional Policy Statement for the Wellington region (RPS) provides direction on the management of resources for fresh and coastal water quality outcomes, including the ability to recreate, safeguarding ecosystem health and that mauri is sustained. The RPS contains policies providing specific direction to WRC and district and city authorities as to how these issues may be addressed through the regional and district plan processes.

The RPS provides four objectives that are of particular relevance to the management of water quality in fresh and coastal waters. These are:

- Objective 6 to maintain or enhance coastal water quality to a level that is "suitable for the health and vitality of coastal and marine ecosystems"

- Objective 12 to provide for fresh water quality that meets the requirements of identified values for water (such as identified in regional plans), and that safeguards the life-supporting capacity of water bodies, and that provides for the reasonable foreseeable needs of future generations

- Objective 13 that the region's fresh water bodies "support healthy functioning ecosystems"

- Objective 27 that mahinga kai and natural resources used for customary purposes are maintained and enhanced, and that these resources are healthy and accessible to mana whenua

The RPS provides policy direction on a series of values for fresh and coastal water which the proposed Plan must give effect to (section 4.1 of the RPS). These policies provide strategic guidance to the proposed Plan development and recognise the necessity for integrated management of the uses of land and water in order to reach stated environmental outcomes. The RPS further provides policies that the proposed Plan must give particular regard to (section 4.2 of the RPS).

'Give effect to' policies

RPS Policies 5 (coastal water) and 12 (fresh water) require the proposed Plan to include policies, rules and other methods to manage water quality and aquatic habitat for the purposes of safeguarding aquatic ecosystem health and for other purposes identified in the regional plan. Regarding coastal water, Policy 5 recognises that this requirement applies 'as a minimum'. Together with the direction of Policy 13, it directs the proposed Plan to contain provisions to establish water allocation limits to take into account aquatic ecosystem health in rivers, lakes and wetlands and to prevent salt water

intrusion. Policy 18 directs the proposed Plan to include provisions to protect the aquatic ecological function of water bodies. Policy 19 requires that the proposed Plan includes methods to maintain or enhance amenity and recreation values in rivers and lakes, including in those water bodies identified in the RPS Table 15 (Appendix 1) for their regionally significant recreation and amenity values.

The RPS also directs the proposed Plan to include policies, rules and methods for an allocation framework that provides for sufficient fresh water for the health needs of people through Policy 17.

Together these policy directions form the key drivers for Objectives O5 and O23 in the proposed Plan.

'Have particular regard' policies

For all water, the Policy 49 of the RPS directs that particular regard must be given to recognising and providing for the exercise of kaitiakitanga, mauri, mahinga kai and Māori customary use and sites with value to mana whenua during a plan review.

3.2.2 Te Upoko Taiao – Natural Resource Management Committee

The proposed Plan was developed under the guidance of Te Upoko Taiao – Natural Resource Management Committee. Te Upoko Taiao comprises seven elected Councillors and seven mana whenua members. The committee was created as an expression of the Treaty of Waitangi relationship at a regional level, enabling a mana whenua perspective in resource management policy direction. The committee is delegated as the decision-making body for the development of the proposed Plan.

The diagram below (Figure 3) shows the principles Te Upoko Taiao has identified for making decisions on for the proposed Plan. These principles frame the way the proposed Plan has been developed and the engagement with the regional community, including mana whenua, key stakeholders and the wider public.

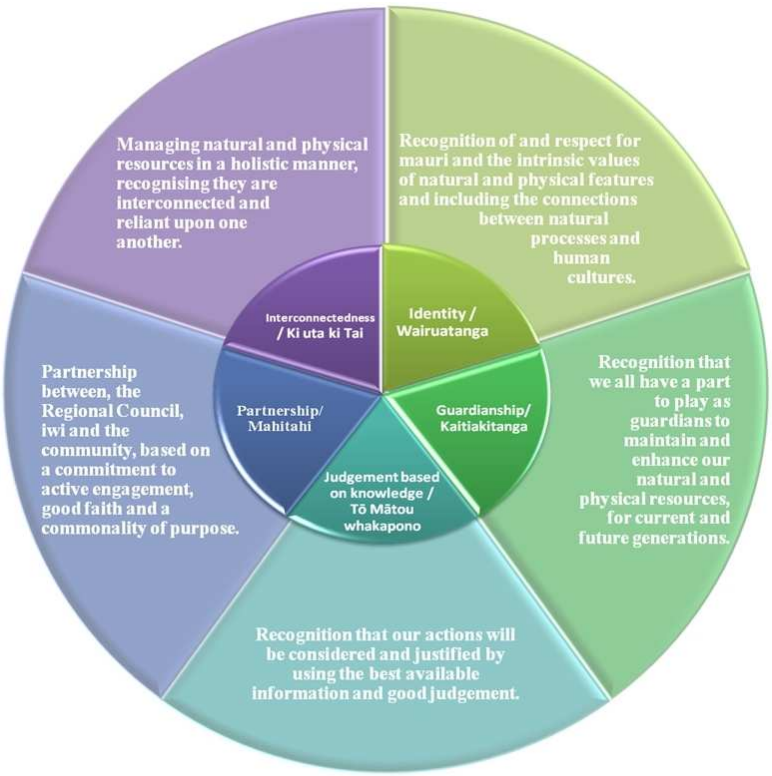

Figure 3: Principles used to guide decision-making during the development of the proposed Plan

Mana whenua of the region support the inclusion of mahinga kai and Māori customary use as fundamental precepts for the management of all water to provide for the intrinsic nature of their values throughout the water cycle and the mauri of the region's fresh and coastal waters.

The proposed Plan was developed in partnership with mana whenua of the Wellington Region. Reflecting the partnership/mahitahi approach of Te Upoko Taiao, the plan takes a 'joint values' approach to managing for key values in water. The joint values of the proposed Plan are 'aquatic ecosystem health and mahinga kai' and 'contact recreation and Māori customary use'. In the proposed Plan, these terms are defined as follows:

- *Mahinga kai*: The customary gathering of food and natural materials, the food and resources themselves and the places where those resources are gathered

- *Māori customary use*: The interaction of Māori with fresh and coastal water for cultural purposes. This includes the cultural and spiritual relationships with water expressed through Māori practices, recreation and the harvest of natural materials

Joining these values recognises that in providing for one the other is largely also provided for. The joint values framework does not propose that the values that make up each joint value are the same, but recognises the benefits that arise from managing for these jointly at a regional scale while acknowledging

their differences. At the whaitua, catchment-specific scale, the joint values can be given further meaning in their geographic and specific context.

An assessment of how mana whenua and Māori values are provided for in the proposed Plan is provided in the report, "Section 32 report: Māori values".

3.2.3 Community and stakeholder engagement on the proposed Plan

From the broader community engagement process discussed in section 2 of this report, a series of stakeholder meetings were held in 2012 and 2013 on specific topic areas in order to further develop objectives and ways of implementing these objectives. For water quality issues, this initially meant workshops for specific topic areas such as stormwater management or rural land use matters. A summary of these workshops can be found in GWRC (2013b).

Following the release of a working document version of the revised regional plan in 2013, a series of workshops were held specifically on water quality, including to discuss values, the 'priority' values and water quality, biological and habitat outcomes included in that working document.

To frame these workshops, a set of values for discussion was generated from an analysis of the 2010 stakeholder engagement material – this process is documented in Parminter and Vujcich (2014). Stakeholders were asked to rate, relative to one another, a set of values for how they should be provided for in the proposed Plan. This process, and a subsequent scenario exercise with stakeholders, underlined the importance of the 'priority' values identified in the working document to the planning process, as well as economic use values such as for food production and livestock. Further stakeholder feedback received on the working document suggested that 'priority' was not a useful term, and that the proposed Plan required better recognition of the beneficial social and economic uses of water.

3.2.4 Relevant operative regional plans

The operative Regional Freshwater Plan (RFP) and Regional Coastal Plan (RCP) for the Wellington region provide regional direction on the management of natural and physical resources for water quality outcomes.

The RFP contains separate objectives relating to tangata whenua values, 'natural' values and amenity and recreation values. These high level objectives are often directed at a set of activities, for example, Objectives 4.1.4 and 4.1.5 provide direction on providing for natural character and ecosystem health in relation to subdivision, use and development. The RCP contains objectives for protecting intrinsic values from inappropriate use and development (Objective 4.1.1), recognises the value of the use of the coast by people and communities (4.1.2) and states that the life-supporting capacity of the coastal marine is retained (4.1.4).

The RFP identifies wetlands, lakes and rivers to be managed for aquatic ecosystem purposes in Appendix 2 Part B, and provides water quality standards suitable for these waters in Appendix 8. Water quality is managed for aquatic ecosystem purposes through Policy 5.2.6, in connection with Appendix 7.1

which identifies water bodies requiring improvement in order to reach aquatic ecosystem purposes in accordance with Policy 5.2.9.

The RFP also identifies water bodies with 'regionally important amenity and recreational values' in Appendix 5 that are to be managed for 'contact recreation purposes' in accordance with Policy 5.2.4. The rivers and lakes identified in this appendix are included for both their primary and secondary contact recreation values. Other management purposes are set out in Policies 5.2.1 (natural state), 5.2.3 (trout fisheries) and 5.2.5 (water supply purposes). The RFP also provides direction in Policy 5.2.9 to improve water quality in rivers listed in Appendix 7.2 for contact recreation purposes.

The policies listed above are relevant during resource consent applications to discharge contaminants to water from point source discharges (e.g., via Rule 5 in the RFP). The RFP does not contain regulatory provisions for non-point discharges. This has led to an ad hoc approach to improving water quality. For instance, the policy direction to improve water quality in water bodies recognised as needing enhancement (Appendix 7) could only be applied to point source discharges. Instead, the RFP contains methods to work with territorial authorities to develop land use controls to minimise adverse effects on water quality (Method 8.4.2) and to advocate for maintaining and enhancing water quality through resource consents processed by territorial authorities (Method 8.4.3).

The RCP directs that water quality is managed for contact recreation and shellfish gathering purposes in delineated areas around the Wellington regional coast under Policies 10.2.1 and 10.2.2, with these water quality states being described in guidelines in Appendix 6. Policy 10.2.3 directs that resource consent applications for point source discharges to water must have particular regard to the water quality guidelines in Appendix 6.

There are no guidelines in the RCP for managing water for ecosystem health purposes, though the RCP does contain a policy direction to have particular regard to the effects of contaminants on elements of ecosystem health including fish spawning and important species in Policy 10.2.9. The RCP does not contain regulatory provisions for non-point discharges, though it does include a policy that seeks to reduce the effects of diffuse pollution on coastal water quality (Policy 10.2.12).

The RCP has a number of objectives and policies relating to tangata whenua matters but these do not explicitly protect values significant to tangata whenua. An RCP objective recognising and providing for tangata whenua values is limited to when it is "practicable" to do so. In the course of the implementation of the current plans, tangata whenua participation has become standard WRC practice in processing resource consent applications.

The outcomes sought in the operative regional plans, RCP and RFP, do not fully give effect to the policy directions in the RPS, nor do they respond to the framework of the NPS-FM. For instance, the operative plans do not provide direction on managing for human health for recreation at a secondary contact level, as is required as a compulsory value in the NPS-FM.

4. Appropriateness of the proposed objectives

Section 32(1)(a) of the RMA 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 as applied in this report 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 RMA?
- *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?

This section presents a description of key objectives in the proposed Plan that are relevant to fresh and coastal water quality – Objectives O23, O24 and O25. Tables A1, A2 and A3 in the Appendix provide a summary evaluation of the appropriateness of the proposed and operative objectives against the four criteria discussed above.

4.1 Objectives for fresh and coastal water quality

4.1.1 Objective O23

The quality of water in the region's rivers, lakes, natural wetlands, groundwater and the coastal marine area is maintained or improved.

Relevance

This is a clearly stated objective that aims to maintain or improve the state of the region's fresh and coastal waters. The objective responds to the identified issues that water quality is being affected by activities on land and discharges to water.

The objective is relevant in that it gives effect to important directions in the RMA (s7(f)) to maintain and enhance the quality of the environment, the NZCPS (Objective 1) to maintain and enhance coastal water quality, and the NPS-FM (Objective A2) to maintain or improve the state of water quality within a region. It further gives effect to RPS Policies 5 and 12 to maintain and enhance fresh and coastal water quality. These are all policy directions that the proposed Plan must give effect to.

Usefulness

The objective is useful as it drives the way the proposed Plan implements water quality improvements prior to the adoption of recommendations from the

whaitua committees. It links many different policies, rules and other methods throughout the proposed Plan, becoming an important driver for both regulatory and non-regulatory provisions.

Reasonableness and achievability

WRC has the appropriate functions under section 30 of the RMA to ensure the objective can be achieved both over the lifetime of the proposed Plan and into the future.

As shown in Table A1 in the Appendix, proposed Objective O23 is reasonable and appropriate.

4.1.2 Objective O24

Rivers, lakes, natural wetlands and coastal water are suitable for contact recreation and Māori customary use, including by:

(a) maintaining water quality, or

(b) improving water quality in:

(i) significant contact recreation fresh water bodies to meet, as a minimum, the primary contact recreation objectives in Table 3.1, and

(ii) coastal water to meet, as a minimum, the primary contact recreation objectives in Table 3.3, and

(iii) all other rivers and lakes and natural wetlands to meet, as a minimum, the secondary contact recreation objectives in Table 3.2.

Contact recreation and Māori customary use objectives

Table 3.1 Primary contact recreation in significant contact recreation fresh water bodies

Water body type	*E. coli* cfu/100mL 95th percentile[5]	Cyanobacteria		Māori customary use	Toxicants and irritants
		Planktonic[6]	Benthic		
Rivers	≤ 540 at all flows below 3x median flow, September to April inclusive		Low risk of health effects from exposure	Fresh water is safe for primary contact and supports Māori customary use	Concentrations of toxicants or irritants do not pose a threat to water users

[5] Derived using the Hazen method from a minimum of 30 data points collected over three years
[6] 80th percentile derived using the Hazen method from a minimum of three years data

Table 3.1 Primary contact recreation in significant contact recreation fresh water bodies					
Water body type	***E. coli*** cfu/100mL 95th percentile[5]	**Cyanobacteria**		**Māori customary use**	**Toxicants and irritants**
		Planktonic[6]	**Benthic**		
Lakes	≤ 540 September to April inclusive	≤ 1.8mm^3/L biovolume equivalent of potentially toxic cyanobacteria OR ≤ 10mm^3/L total biovolume of all cyanobacteria			

Table 3.2 Secondary contact with water in fresh water bodies			
Water body type	***E. coli*** cfu/100mL median[7]	**Cyanobacteria**	
		Planktonic[2]	**Benthic**
Rivers	≤ 1,000		Low risk of health effects from exposure
Lakes		≤ 1.8mm^3/L biovolume equivalent of potentially toxic cyanobacteria OR ≤ 10mm^3/L total biovolume of all cyanobacteria	

Table 3.3 Contact recreation in coastal water			
Coastal water type	**Pathogens** Indicator bacteria/100mL 95th percentile[8]	**Māori customary use**	**Shellfish quality**
Estuaries[9]	≤ 540 *E. coli*	Coastal water is safe for primary contact and supports Māori customary use	Concentrations of contaminants, including pathogens, are sufficiently low for shellfish to be safe to collect and consume where appropriate
Open coast and harbours[10]	≤ 500 enterococci		

[7] Based on a minimum of 12 data points collected over three years
[8] Derived using the Hazen method from a minimum of 30 data points collected over three years
[9] Excludes Te Awarua-o-Porirua Harbour and includes Lake Onoke. Estuaries, including river mouth estuaries, should be treated as an estuary when they are dominated by saline water, in which case Table 3.3 applies, and as rivers when they are dominated by fresh water, in which case Table 3.1 or 3.2 applies.
[10] Includes Wellington Harbour (Port Nicholson) and Te Awarua-o-Porirua Harbour. Excludes the Lambton Harbour Area within the Commercial Port delineated in Map 32.

Relevance

Being able to touch, play and interact with water and remain healthy in doing so was a key message from the WRC's community engagement underpinning the development of the proposed Plan.

The direction to provide for suitable water quality to safeguard human health from contact with water is also directed by the RPS, the NPS-FM and the NZCPS and is supported by the values of Te Upoko Taiao. In particular, the NPS-FM includes requirements to provide for 'immersive' (primary) and 'non-immersive' (secondary) contact with fresh water. This objective responds to the NOF framework, together with the 'joint values framework' approach in the proposed Plan of managing concurrently for contact recreation and Māori customary use.

Usefulness

This objective provides guidance on how fresh and coastal water quality should be managed in order to provide for contact recreation and Māori customary use across the Wellington Region. Land use activities and discharges adversely affect the people's opportunities for recreation and use of fresh and coastal water throughout the region. The objective is useful as it provides direction to consent decision-making as well as providing direction to the whaitua committees and the process of setting limits for rural and urban land use and discharge activities.

The shared value of contact recreation and Māori customary use recognises that both 'use values' require people to be able to safely access and interact with water. Consequently, in providing for safe contact recreation, safe Māori customary use can also be provided for (at least to some extent). It is recognised that there is a crossover of the 'attributes' of water that makes it suitable for contact recreation and Māori customary use, and Tables 3.1 to 3.3 in proposed Objective O24 describe the water quality states that would be expected in providing for this shared regional value.

Proposed Objective O24 provides details of what this shared value looks like and then sets out a series of numeric and narrative objectives (Tables 3.1, 3.2 and 3.3) for water quality attributes in rivers,[11] lakes, wetlands, harbours and the open coast. The objectives in Tables 3.1, 3.2 and 3.3 apply in all cases after reasonable mixing.

Objective O24 sets three directions for improving water quality for contact recreation and Māori customary use purposes: for water quality in all fresh water ways to be, at a minimum, the national NOF bottom line for secondary contact with water; to provide for swimming water quality in all significant swimming rivers; and to provide for water quality for swimming water in all coastal waters (outside of the delineated Commercial Port Area within Lambton Harbour).

For fresh water, Tables 3.1 and 3.2 of proposed Objective O24 set out attributes and objectives for primary and secondary contact with water. These

[11] The term 'river' is a defined term in the RMA and is used to mean rivers and streams of all sizes.

terms, given particular meaning by the NPS-FM, distinguish between 'primary' contact with water that is immersive (e.g., swimming, diving) and 'secondary' contact with water that is not (e.g., boating without falling in, paddling). In fresh water, there are assumed differences in risk between becoming contracting a *Campylobacter* infection because of faecal contamination in the water via immersive vs non-immersive contact with water (McBride 2012). The objectives for primary contact water quality apply to fresh water bodies with significant contact recreation values that are listed in Schedule H1 of the proposed Plan. These have been identified from the fresh water bodies listed in the RPS (Table 15, Appendix 1) as having regionally significant recreation values associated with activities that involve swimming or boating activities that involve a high chance of falling in the water.

Under the NOF of the NPS-FM, primary and secondary contact are described as elements of 'human health for recreation' as follows:

- Primary contact with water: people are exposed to a moderate risk of infection (less than 5% risk) or better when undertaking activities likely to involved full immersion

- Secondary contact with water: people are exposed to a moderate risk of infection (less than 5% risk) or better from contact with water during activities with occasional immersion and some ingestion of water

The concepts of primary and secondary contact with water only apply in the fresh water environment – in the coastal water the risks of illness due to immersive vs non-immersive contact with water are considered similar due to factors such as wave action and aerosolisation of water particles.

In line with the NOF, the tables for fresh water in Schedule H use the nationally accepted figures for primary and secondary contact with water. In order to achieve proposed Plan Objective O23, this means that under proposed Objective O24 water quality for contact recreation and Māori customary use will be:

- Maintained in all fresh and coastal water at its current state, or

- Where fresh water quality in a river recognised as having significant primary contact recreation values is below an objective stated in Table 3.1, including below the *E.coli* objective and therefore below the minimum acceptable state in the NOF for primary contact, water quality will be improved to, as a minimum, meet that objective, or

- Where fresh water quality is below an objective in Table 3.2, including below the *E.coli* objective and therefore below the minimum acceptable state in the NOF for secondary contact, water quality will be improved to, as a minimum, meet that objective, or

- Where coastal water quality is below an objective in Table 3.3, water quality will be improved to, as a minimum, meet that objective

Reasonableness and achievability

WRC has the appropriate functions under section 30 of the RMA to ensure the objective can be achieved both over the lifetime of the proposed Plan and into the future. In particular, WRC has controls under sections 9, 12, 14 and 15 of the RMA that are relevant to achieving this objective.

As the objective is broad and high level, it will affect a broad range of resource users who rely on water for its economic value and ability to dilute and transport waste, as well as for social and cultural uses. Particularly where this objective affects the operation of wastewater and stormwater discharges, the achievability of this objective is constrained by the ability of communities to afford improved infrastructure for their urban systems.

This objective is reasonable as it is a long term objective for the Wellington Region and provides important direction to the whaitua committees as they set limits to achieve this regional objective (as a minimum) within their whaitua. This objective has meaningful social, cultural and economic benefits that can be appropriate balanced with the financial costs of maintaining and improving through policies, rules and methods in the proposed Plan.

As shown in Table A2 in the Appendix, proposed Objective O24 is reasonable and appropriate for the proposed Plan.

4.1.3 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 fresh water body or coastal marine area is improved over time to meet that objective.

Note

Where the relevant whaitua sections of the proposed Plan contain an objective on the same subject matter as Objective O25 (water quality, biological and habitat outcomes), the more specific whaitua objective will take precedence.

Aquatic ecosystem health and mahinga kai objectives

Table 3.4 Rivers and streams								
River class[12]		**Macrophytes**	**Periphyton[13]** mg/m^2 chlorophyll *a*		**Invertebrates[14]** Macroinvertebrate Community Index		**Fish**	**Mahinga kai species**
			All rivers	**Significant rivers[15]**	**All rivers**	**Significant rivers[16]**		
1	**Steep, hard sedimentary**	Indigenous macrophyte communities are resilient and their structure, composition and diversity are balanced	≤ 50	≤ 50	≥ 120	≥ 130	Indigenous fish communities are resilient and their structure composition and diversity are balanced	Mahinga kai species, including taonga species, are present in quantities, size and of a quality that is appropriate for the area
2	**Mid-gradient, coastal and hard sedimentary**		≤ 120	≤ 50	≥ 105	≥ 130		
3	**Mid-gradient, soft sedimentary**		≤ 120*	≤ 50*	≥ 105	≥ 130		
4	**Lowland, large, draining ranges**		≤ 120	≤ 50	≥ 110	≥ 130		
5	**Lowland, large, draining plains and eastern Wairarapa**		≤ 120*	≤ 50*	≥ 100	≥ 120		
6	**Lowland, small**		≤ 120*	≤ 50*	≥ 100	≥ 120		

[12] Shown on Maps 21a to 21e [in the proposed Plan].
[13] The periphyton objectives for River classes 3,5 and 6 marked with an asterisk (*) shall not be exceeded by more than 17% of samples; for all other River classes, to be exceeded by no more than 8% of samples based on a minimum of three years of monthly sampling.
[14] Rolling median based on a minimum of three years of annual samples collected during summer or autumn.
[15, 11] Rivers or streams with high macroinvertebrate community health, identified in column 2 of Schedule F1 (rivers/lakes) [in the proposed Plan]..

Table 3.5 Lakes					
Lake type	**Macrophytes**	**Phytoplankton**	**Fish**	**Mahinga kai species**	**Nutrients**
All lakes[17]	Submerged and emergent macrophyte communities are resilient and occupy at least one third of the lake bed that is naturally available for macrophytes, and are dominated by native species	Phytoplankton communities are balanced and there is a low frequency of nuisance blooms	Indigenous fish communities are resilient and their structure, composition and diversity are balanced	Mahinga kai species, including taonga species, are present in quantities, size and of a quality that is appropriate for the area	Total nitrogen and phosphorus concentrations do not cause an imbalance in aquatic plant, invertebrate or fish communities

Table 3.6 Groundwater			
Groundwater type	**Nitrate**	**Quantity**	**Saltwater intrusion**
Directly connected to surface water	Nitrate concentrations do not cause unacceptable effects on groundwater-dependent ecosystems or on aquatic plants, invertebrate or fish communities in connected surface water bodies	The quantity of water is maintained to safeguard healthy groundwater-dependent ecosystems	The boundary between salt and fresh groundwater does not migrate between fresh water and salt water aquifers
Not directly connected to surface water	Nitrate concentrations do not cause unacceptable effects on stygofauna communities or other groundwater ecosystems		

[17] Except for intermittently closed and open lakes or lagoons (ICOLLs), such as Lake Onoke. These should be treated as a lake when they are in a closed state. When open to the coast, they should be managed as an estuary, in which case Table 3.8 applies.

Table 3.7 Natural wetlands					
Wetland type	**Plants**	**Fish**	**Mahinga kai species**	**Nutrient status**	**Hydrology**
Bog	Indigenous plant communities are resilient and their structure, composition and diversity are balanced	Indigenous fish communities are resilient and their structure composition and diversity are balanced	Mahinga kai species, including taonga species, are present in, or are migrating through, the wetland and are in quantities, size and of a quality that is appropriate to the area	Low or very low	Water table depth and hydrologic regime is appropriate to the wetland type
Fen				Low to moderate	
Swamp				Moderate to high	
Marsh				Moderate to high	

Table 3.8 Coastal waters							
Coastal water type	**Macroalgae**	**Seagrass and saltmarsh**	**Invertebrates**	**Mahinga kai species**	**Fish**	**Sedimentation rate**	**Mud content**
Open coast	The algae community is balanced with a low frequency of nuisance blooms	NA	Invertebrate communities are resilient and their structure, composition and diversity are balanced	Mahinga kai species, including taonga species, are present in quantities, sizes and of a quality that is appropriate for the area	NA		
Estuaries and harbours[18]		Seagrass, saltmarsh and brackish water submerged macrophytes are resilient and diverse and their cover is sufficient to support invertebrate and fish communities			Indigenous fish communities are resilient and their structure, composition and diversity are balanced	The sedimentation rate is within an acceptable range of that expected under natural conditions	The mud content and areal extent of soft mud habitats is within a range of that found under natural conditions

[18] Intermittently closed and open lakes or lagoons (ICOLLs), such as Lake Onoke, should be treated as an estuary when they are in an open state. When closed to the coast, they should be managed as a lake, in which case Table 3.2 applies.

Proposed Objective O25 as a whole is assessed for its appropriateness in the report, "Section 32 report: Aquatic ecosystem health". The assessment in this report focuses in particular on part (c) of Objective O25, the water quality element of the objective. While the appropriateness of this objective is not discussed here, the policies that give effect to Objective O25 are part of the broader water quality policy framework. Therefore this objective is briefly described here and the analysis in the following sections is focused on how Objective O25(c) and Objective O23 are implemented together.

Objective O25(c) describes in a series of tables (Tables 3.4-3.8) what fresh and coastal water bodies look like when they meet the proposed Plan's aim to safeguard ecosystem health and mahinga kai. Tables 3.4-3.8 contain biological, substrate and water quality attributes of aquatic ecosystem health and mahinga kai in rivers, lakes, wetlands, groundwater and coastal water. The numeric and narrative objective states provide an expression of safeguarding aquatic ecosystem health and mahinga kai at a regional scale.

Objective O25(c) provides guidance to resource consent decision-making, such as for point source discharges to water, and provides guidance to the whaitua committees in regard to setting limits for rural and urban land use and discharge activities at the catchment scale. The proposed Plan does not set fresh water objectives or water quality limits as required by the NPS-FM. It is the role of the whaitua committees to set freshwater objectives in accordance with the NPS-FM (see GWRC 2015b).

A full assessment of the appropriateness of Objective O25, including how the numeric and narrative objectives in Tables 3.4 to 3.8 were established, can be found in the report, "Section 32 report: Aquatic ecosystems".

4.1.4 Relationship between water quality objectives

This section brings the three Objectives O23, O24 and O25 together to show the relationships between them and how they interact and cross over.

Objective O23 directs that water quality is maintained or improved in the region's fresh and coastal waters. This direction arises from Objective A2 of the NPS-FM which states that overall fresh water quality within a region shall be maintained or improved. Under Objective O23, the aim of the proposed Plan is to maintain the current water quality state in all locations except for in identified locations where water quality will be improved through specific programmes.

Objective O24 drives water quality improvements for contact recreation and Māori customary use in locations where the desired state, specified in Tables 3.1-3.3 of the objective, is not met. Objective O24 defines a minimum state to be achieved but does not define a timeframe or prescribe the management actions to achieve this improvement. This is appropriate as it reflects the nature of the multiple actions that, on a case-by-case basis, are available for improving water quality for contact recreation and Māori customary use. Efforts to improve the water quality may include non-regulatory programmes in the identified location or specific resource consent conditions for activities impacting contact recreation and Māori customary use attributes.

Objective O25 is to safeguard aquatic ecosystem heath and mahinga kai by maintaining water quality in water bodies which currently safeguard ecosystem health and by encouraging restoration and directing improvement, over time, in locations where the desired state, specified in Tables 3.4-3.8, is not met. The management actions for achieving such an improvement in a water body's state over time are not prescribed. This is appropriate as it reflects the nature of the multiple actions that can most efficiently improve aquatic ecosystem heath and mahinga kai on a case-by-case basis. A timeframe for achieving the improvement outcomes in Objective O25 is not set within the objective. This is appropriate as Objective O25 guides many different policies and methods, reflecting the different management responses across a range of resource management issues throughout the region. These different situations will require different interventions and produce different time frames for efficient improvement in the state of the resource. Subsequently, a single, region-wide time frame is not appropriate in practice and inefficient in implementation.

Taken together, Objectives O23, O24 and O25 interact in a way that allows water quality to be maintained or improved across the region and improved in defined locations where the attributes of water quality under Objectives O24 and O25 are not being met. Actions to improve water quality for contact recreation and Māori customary use may happen independently or simultaneously with actions or provisions to improve water quality associated with improving aquatic ecosystem health and mahinga kai outcomes.

In implementing Objectives O23, O24 and O25 through the policies, rules and other methods in the proposed Plan, improvements will be prioritised across the region giving consideration to factors including the nature of the issues and the severity of impact. Sites and specific activities may require additional regulatory and non-regulatory efforts in order to improve, over time, water quality for contact recreation and Māori customary use, aquatic ecosystem health and mahinga kai. Therefore, the overall framework for water quality in the proposed Plan is that regional-scale water quality will be maintained and some identified localities will be managed to improve water quality, complementing the whaitua processes as they are progressively rolled out across the region.

4.1.5 Supporting objectives

Objective O1

Land, fresh water bodies and the coast are managed as integrated and connected resources; ki uta ki tai – mountains to the sea.

The proposed Objective O1 is directly related to Issue 1.1, that land, fresh water and the coast are valued for a variety of reasons and are under pressure from multiple, and sometimes competing, uses and developments which are having a cumulative adverse effect on the health and function of fresh water and coastal resources.

The principle of ki uta ki tai, from the mountains to the sea, recognises the interconnections between surface water and groundwater, between land use and water quality, between water quantity and water quality and between fresh

water and the coast. The use of integrated catchment management requires the catchment to be used as the spatial unit for the decision-making process. Managing natural resources in an integrated manner also requires decision-making to be based on the best available information. Since natural processes are dynamic this requires management to be adaptive. Integrated catchment management should also recognise the links between environmental, social, cultural and economic sustainability of the catchment.

The objective of integrated catchment management is integral to the NPS-FM and the NZCPS.

Objective O4

The intrinsic values of aquatic fresh water and marine ecosystems and the life-supporting capacity of water are recognised.

This proposed objective underpins the management of water quality in the region through the proposed Plan. With respect to the discharge of stormwater, the proposed provisions seek to ensure that fresh and coastal water objectives are met through time and that the intrinsic values and the life-supporting capacity of the region's water are respected and protected. This is achieved through enabling less than minor discharges to occur as permitted activities, and through other discharges such as of stormwater and wastewater to be regulated and progressively improved through time.

Objective O5

Fresh water bodies and the coastal marine area, as a minimum, are managed to:

(a) safeguard aquatic ecosystem health and mahinga kai, and

(b) provide for contact recreation and Māori customary use, and

(c) in the case of fresh water, provide for the health needs of people.

Proposed Objective O5 states the intended outcomes for the management of natural and physical resources in the Wellington region. In combination with objectives related to specific management outcomes for water and land resources, including catchment-specific outcomes resulting in the future from the whaitua committee process, this objective will assist in guiding effective decision-making. The objective takes its direction from the NPS-FM, RPS and the extensive community engagement process that was implemented at the outset of the plan review.

The objective sets out the minimum considerations for the management of fresh and coastal waters. It does not preclude them from being managed for a multiplicity of values or uses. In doing so, Objective O5 aims to improve integration both within and between catchments and whaitua. This is achieved by establishing a set of minimum, common values for managing fresh and coastal waters within and between hydrological catchments or whaitua. The objective is broad and overarching, under which falls much of the proposed Plan's approach to managing land use and fresh and coastal water. In

particular, Objective O5 provides an overarching direction to proposed Objectives O23, O24 and O25.

Objective O9

The recreational values of the coastal marine area, rivers and lakes and their margins and natural wetlands are maintained and enhanced.

This proposed objective pursues the maintenance and enhancement of recreational values in the coastal environment as well as in natural wetlands and lakes and rivers and it is intended that an activity would have to determine whether its effects would maintain and enhance recreational values. This is consistent with Policy 6(2)(b) of the NZCPS which seeks those recreational qualities and values of the coastal marine area are maintained and enhanced.

Objective O18

The ecological, recreational, mana whenua, and amenity values of estuaries including their sensitivity as low energy receiving environments are recognised, and their health and function is restored over time.

The ecosystem health and function of surface water bodies is being impaired by activities that degrade habitat quality, with some wetland and lowland stream ecosystems coming under particular pressure. The lower reaches of rivers, as well as lakes, estuaries and harbours are places where there is an accumulation of the adverse effects of human activities.

Estuaries are ecologically important for both fresh water and marine communities, and many recreationally, culturally and commercially important species spend part of their life cycle in or moving through estuaries. It is intended that the importance of estuaries be recognised, and their health improved through reducing human impacts on these important ecosystems.

Ecosystems containing important indigenous species have been reduced in extent and continue to be degraded. The region's large low-energy receiving environments – Lake Wairarapa, Te Awarua-o-Porirua Harbour and the Wellington Harbour (Port Nicholson) – are regionally important ecosystems and contain species that are under threat from excessive sedimentation and contamination from pollutants including nutrients from land use, stormwater and sewage discharges.

The proposed Plan must give effect to Policy 6 of the RPS to recognise and acknowledge the regional significance of Te Awarua-o-Porirua Harbour and to maintain, protect and enhance the significant amenity, recreational, ecological and cultural values associated with Te Awarua-o-Porirua Harbour. NZCPS Policy 11 is also highly relevant to this objective, as are the RPS Policies 5, 6 and 18. RPS Policies 23 and 24 are also relevant and require identification and protection of ecosystems and habitats with significant indigenous biodiversity values.

Objective O26

The availability of mahinga kai species to support Māori customary harvest is increased, in quantity, quality and diversity.

Threats to mahinga kai and natural resources include degradation of water quality in fresh water and marine environments through poor stormwater, sewage and runoff management and loss of water resources and associated ecosystems through water abstraction, drainage and flood management works.

This proposed objective describes an outcome whereby resources are managed to ensure that cultural resources found in the region's lakes, wetlands and coastal areas are of a quality and abundance that is sufficient to support cultural, physical and social health and well-being.

Given that the threats to the health, quality and quantity of mahinga kai in fresh and coastal waters is affected by a broad range of activities, the achievement of this objective is interconnected and dependent on not just the achievement of the other objectives associated with mana whenua and Māori values, but also those describing outcomes for water quality and land use management more generally.

The proposed objective gives effect to Policy 49 of the RPS which states that mahinga kai and areas of natural resources used for customary purposes shall be recognised and provided for.

4.2 Conclusion

The proposed Objectives O23, O24 and O25 seek to address the shortcomings of the operative provisions, and create a clear and efficient framework with which decision-makers and plan users can assess proposals. The assessment of the proposed objectives in Tables A1, A2 and A3 summarise the following:

The proposed objectives are relevant as they:

- Reflect the values of the regional community
- Express the principal-led approach of the decision-making body for this plan, Te Upoko Taiao
- Give effect to the RMA, NPS-FM, NZCPS and RPS
- Use language and terminology that is consistent with the RMA, RPS, NPS-FM and NZCPS; and
- Reflect current scientific research and data

The proposed objectives are useful in achieving the purpose of the RMA as they are:

- Consistent with the guidance, direction and requirements in the NPS-FM, NZCPS and RPS; and

- 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 the management of activities that impact water quality

The assessments summarised in Tables A1, A2 and A3 in the Appendix also show that the proposed objectives incorporate the relevant considerations of the operative objectives, but in a manner that is more efficient and comprehensive than the operative objectives. The objectives discussed above and detailed in the proposed Plan are considered to be relevant and useful in achieving the purpose of the RMA.

5. Refining the water quality issues

To refine the water quality issues for the region in terms of the expectations of the proposed Plan, fresh and coastal water bodies in the state of the environment monitoring networks were benchmarked against the proposed objectives in Tables 3.1-3.3 (proposed Objective O24) and Tables 3.4-3.8 (proposed Objective O25). This analysis (Greenfield et al. 2015a) was undertaken in accordance with guidance (Greenfield et al. 2015b) developed to help resource users interpret these objectives, including to provide guidance where data is lacking or to suggest interpretation of a narrative objective. Tables 2 and 3 (below) list, respectively, those water bodies that do not meet the objectives of the proposed Plan for aquatic ecosystem health and mahinga kai, and for contact recreation and Māori customary use.

This work was further informed by analyses of fresh water bodies against relevant NOF bottom lines for the compulsory national values.[19] Because of the lack of data collected on natural wetlands in the Wellington Region, the wetlands objectives in Table 3.7 were not benchmarked. For rivers and streams, those water bodies identified as not being likely to meet the proposed Plan aquatic ecosystem health objectives for macrophyte or periphyton objectives, or which are identified as having poor macroinvertebrate community health, are identified below as requiring improvement through a method in the proposed Plan. For groundwater, the benchmarking identified a number of aquifers with elevated groundwater nitrate levels. This work was further informed by recent monitoring (Tidswell 2015) showing that one groundwater zone (Te Ore Ore) occasionally records nitrate concentrations well in exceedance of the suggested guidance value for protecting ecosystem health and in exceedance of the guidance value for protecting human health from consumption of the water.

For benchmarking contact recreation and Māori customary use outcomes in the coastal environment, data from the region-wide recreational water quality network was used and was further augmented with data provided by Wellington Water Limited of regularly monitored sites in the Wellington Harbour (Port Nicholson). This data was also examined to avoid identifying areas that may have failed the benchmarking through a significant but one off contamination event.

[19] As set out in Objective A1 of the NPS-FM, these are to safeguard the life-supporting capacity of fresh water ecosystems and the health of people and communities through secondary contact with fresh water.

Tables 2 and 3 summarise the nature of the water quality issue identified in each water body, including possible causes and risks regarding the certainty of the data. Water bodies are grouped according to the whaitua in which they are located. Fresh and coastal water bodies that are not identified in Tables 2 or 3 shall be managed under the proposed Plan to maintain water quality in order to safeguard aquatic ecosystem health and mahinga kai and provide for contact recreation and Māori customary use, in accordance with proposed Objectives O23, O24 and O25.

Table 2: Summary of issues – catchments where water quality requires improving in order to safeguard aquatic ecosystem health and mahinga kai

Whaitua (catchment)	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
Ruamāhanga	Mangatarere groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Legacy and ongoing agricultural land use practices	Good data set, but an interpretation of narrative outcomes – possible ecosystem health effects. Uncertainty regarding cause of elevated levels	Proposed Plan Table 3.7	Greenfield et al. 2015
	Taratahi groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Possible industrial legacy, ongoing agricultural land use practices	Good data set, but an interpretation of narrative outcomes – possible ecosystem health effects. Uncertainty regarding cause of elevated levels	Proposed Plan Table 3.7	Greenfield et al. 2015
	Parkvale Stream (tributary at Lowes Reserve)	Fails NOF bottom line for nitrate toxicity	Contaminated groundwater inputs due to ongoing agricultural land use and possible industrial legacy	Uncertainty as to the cause of elevated nitrate levels	National Objectives Framework	Greenfield et al. 2015
	Parkvale Stream	Unlikely to meet proposed Plan periphyton objective	Ongoing agricultural land use, resulting in nutrient inputs via overland runoff, shallow groundwater and stock access to streams, infrequent flushing flows and low summer-time base flows. Possible legacy nutrient inputs from industry	Incomplete data set, therefore indicative assessment only	Proposed Plan Table 3.4	Greenfield et al. 2015
		Likely to fail NOF bottom line for periphyton			National Objectives Framework	WRC 2015c
	Tauherenikau groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Legacy and ongoing agricultural land use practices	Good data set, but an interpretation of narrative outcomes – possible ecosystem health effects. Uncertainty regarding cause of elevated levels	Proposed Plan Table 3.7	Greenfield et al. 2015

Whaitua (catchment)	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
	Martinborough groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Possible golf course, viticulture, ongoing agricultural land use practices	Good data set, but an interpretation of narrative outcomes – possible ecosystem health effects. Uncertainty regarding cause of elevated levels	Proposed Plan Table 3.7	Greenfield et al. 2015
	Te Ore Ore groundwater	Groundwater nitrate levels failed to meet drinking water standards in 2014 sample year – proximity to known drinking water source	Possible legacy potato cropping, ongoing agricultural land use practices	Single year result, but nitrate concentrations known to fluctuate above and below DWS	Drinking-water Standards for New Zealand 2005 (Revised 2008)	Tidswell 2015
	Kopuaranga Stream	Unlikely to meet proposed Plan periphyton objective	Ongoing agricultural land use, overland runoff, shallow groundwater and stock access to streams, infrequent flushing flows and low summer-time base flows	Incomplete data set, therefore indicative assessment	Proposed Plan Table 3.4	Greenfield et al. 2015
		Likely to fail NOF bottom line for periphyton			National Objectives Framework	WRC 2015c
	Huangarua River	Unlikely to meet proposed Plan periphyton objective	Ongoing agricultural land use, overland runoff, shallow groundwater and stock access to streams, infrequent flushing flows and low summer-time base flows	Incomplete data set, therefore indicative assessment	Proposed Plan Table 3.4	Greenfield et al. in prep-a
		Likely to fail NOF bottom line for periphyton			National Objectives Framework	WRC 2015c
	Whangaehu River	Poor macroinvertebrate community health (does not meet proposed Plan objective)	Ongoing agricultural land use, modification of stream channel and riparian margins, infrequent flushing flows and low summer-time base flows	Good data set, causal relationships not well established	Proposed Plan Table 3.4	Greenfield et al. 2015

Whaitua (catchment)	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
	Lake Wairarapa	Unlikely to meet proposed Plan nutrient objective. In a eutrophic to supertrophic state but stable state over past 20 years.	Largely pastoral catchment, receives wastewater treatment plant discharge, potential legacy issues associated with historical nutrient/sediment inputs, highly influenced by historical drainage and flood protection activities	Reasonable data quality, and causal relationships not well established	Proposed Plan Table 3.5	Greenfield et al. 2015
		Fails NOF bottom line for phosphorus			National Objectives Framework	WRC 2015c
Wairarapa Coast	Taueru River	Unlikely to meet proposed Plan periphyton objective	Ongoing agricultural land use, nutrient inputs via overland runoff, shallow groundwater, stock access to streams, infrequent flushing flows and low summer-time base flows	Incomplete data set, therefore indicative assessment only	Proposed Plan Table 3.4	Greenfield et al. 2015
		Likely to fail NOF bottom line for periphyton			NOF periphyton bottom line	
	Whareama estuary	Unlikely to meet proposed Plan objective, excessive mud content in sediments	Soil erosion, stream bank erosion, erosion prone soils	Good data, interpretation of narrative outcome	Proposed Plan Table 3.8	Greenfield et al. 2015
	Awhea River	Poor macroinvertebrate community health (does not meet proposed Plan objective)	Ongoing agricultural land use, modification of stream channel and riparian margins combined, infrequent flushing flows and low summer-time base flows	Good data set, causal relationships not established	Proposed Plan Table 3.4	Greenfield et al. 2015
Kāpiti Coast	Te Horo groundwater	Elevated nitrate levels over longer term – possible ecosystem health effects	Possible localised septic tank contamination, legacy and ongoing agricultural land use practices	Good data set, but an interpretation of narrative outcomes – possible ecosystem health effects. Uncertainty regarding cause of elevated nitrate levels	Proposed Plan Table 3.7	Greenfield et al. 2015

Whaitua (catchment)	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
	Ōtaki groundwater	Elevated nitrate levels over longer term – possible ecosystem health effects	Legacy horticulture, ongoing intensive rural land uses	Good data set, but an interpretation of narrative outcomes – possible ecosystem health effects. Uncertainty regarding cause of elevated nitrate levels	Proposed Plan Table 3.7	Greenfield et al. 2015
	Mangaone Stream	Poor macroinvertebrate community health (does not meet proposed Plan objective)	Ongoing agricultural and legacy horticultural land uses, modification of stream channel and riparian margins, infrequent flushing flows and low summer-time base flows.	Good data set, uncertainty regarding possible causes	Proposed Plan Table 3.4	Greenfield et al. 2015
		Unlikely to meet macrophyte proposed Plan objective	Ongoing agricultural and legacy horticultural land uses, infrequent flushing flows and low summer-time base flows	Small data set, uncertainty regarding possible causes, interpretation of narrative objective	Proposed Plan Table 3.4	Greenfield et al. 2015
	Mangapouri Stream	Poor macroinvertebrate community health (does not meet proposed Plan objective)	Ongoing urban, agricultural and horticultural land uses, modification of stream channel and riparian margins, infrequent flushing flows and low summer-time base flows	Good data set, uncertainty regarding possible causes	Proposed Plan Table 3.4	Greenfield et al. 2015
		Unlikely to meet macrophyte proposed Plan objective	Ongoing urban, agricultural and horticultural land uses, infrequent flushing flows and low summer-time base flows	Small data set, uncertainty regarding possible causes, interpretation of narrative objective	Proposed Plan Table 3.4	Greenfield et al. 2015
	Lake Waitawa	Unlikely to meet proposed Plan narrative objectives for total nitrogen, total phosphorus and phytoplankton	Legacy and ongoing private WWTP discharge, ongoing stock access and intensive rural land use practices	Small data set but reasonable certainty, causal relationships not established, potential cross-boundary (Manawatu-Whanganui	Proposed Plan Table 3.4	Greenfield et al. 2015

Whaitua (catchment)	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
		Likely to fail NOF bottom line for phytoplankton		region) contributions	NOF phytoplankton bottom line	Greenfield et al. 2015
Te Awarua-o-Porirua	Te Awarua-o-Porirua Harbour estuaries (Pauatahanui and Onepoto arms)	Unlikely to meet proposed Plan objectives, high sedimentation rates, excessive mud content	Earthworks, urban and rural stormwater pollutants, stream bank erosion (stock access) erosion prone soils, forestry, and hill country erosion	Good data and established causal relationship	Proposed Plan Table 3.8	Greenfield et al. 2015
Wellington Harbour/Hutt Valley	Waiwhetu Stream	Poor macroinvertebrate community health Unlikely to meet macrophyte proposed Plan objective	Ongoing and legacy urban land uses resulting in nutrient, sediment and toxicant inputs, modification of stream channel and riparian margins combined with infrequent flushing flows and low summer-time base flows.	Good data set, causal relationships not established	Proposed Plan Table 3.4	Greenfield et al. 2015

Table 3: Summary of issues – catchments where water quality requires improving in order to provide for contact recreation and Māori customary use

Whaitua	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
Ruamāhanga	Ruamāhanga River	Unlikely to meet proposed Plan benthic cyanobacteria narrative objective (particularly at Kokotau and The Cliffs)	Multiple factors	Good data set, causal relationships not established	Proposed Plan Table 3.1 objective	Greenfield et al. 2015
	Waipoua River	Unlikely to meet proposed Plan benthic cyanobacteria narrative objective (Colombo Road)	Multiple factors	Good data set, causal relationships not established	Proposed Plan Table 3.1 objective	
Kāpiti Coast	Mangapouri Stream	Equal to NOF bottom line for *E.coli* outcome for secondary contact with water	Agricultural and urban land use in catchment	Good data set, causal relationships not established	National Objectives Framework	
	Lake Waitawa	Fails proposed Plan planktonic cyanobacteria objective	Agricultural land use in catchment, groundwater interaction, WWTP discharge to lake	Small data set but reasonable certainty, causal relationships not established, potential cross-boundary (Horizons) contributions	National Objectives Framework and proposed Plan Table 3.1 objective	
Te Awarua-o-Porirua	Te Awarua-o-Porirua (Onepoto Arm)	Fails proposed Plan pathogen objective for contact recreation (at Rowing Club)	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships somewhat established including contribution from Porirua Stream	Proposed Plan Table 3.3 objective	
	Plimmerton	Fails proposed Plan pathogen objective for contact recreation (at South Beach)	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships somewhat established	Proposed Plan Table 3.3 objective	
	Titahi Bay	Fails proposed Plan pathogen objective for contact recreation (at South Beach access road)	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships somewhat established	Proposed Plan Table 3.3 objective	

Whaitua	Location/test site	Issue/impact	Possible reasons	Uncertainty/information risk	Test	Reference
Wellington Harbour/Hutt Valley	Karori Stream	Fails NOF bottom line for *E.coli* outcome for secondary contact with water	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships somewhat established	National Objectives Framework	
	Te Awa Kairangi/Hutt River	Fails proposed Plan pathogen objective for primary contact recreation (at Melling Bridge), is a regionally significant contact recreation water body	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships not established	Proposed Plan Table 3.1 objective	
		Unlikely to meet proposed Plan benthic cyanobacteria narrative objective	Multiple factors	Good data set, causal relationships somewhat established	Proposed Plan Table 3.1 objective	
	Wainuiomata River	Fails proposed Plan pathogen objective for primary contact recreation (at Richard Prouse Park), is a regionally significant contact recreation water body	Stock access to streams, discharges from septic tanks, aging urban infrastructure, illegal cross connections	Good data set, causal relationships somewhat established	Proposed Plan Table 3.1 objective	
	Island Bay	Fails proposed Plan pathogen objective for contact recreation (at Derwent Street, Reef Street and Surf Club)	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships somewhat established	Proposed Plan Table 3.3 objective	
	Owhiro Bay	Fails proposed Plan pathogens objective for contact recreation	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships not established	Proposed Plan Table 3.3 objective	
	Wellington Harbour waterfront	Fails proposed Plan pathogen objective for contact recreation (at Harris Street, Hunter Street and Tory Street)	Aging stormwater and wastewater infrastructure, illegal cross connections	Good data set, causal relationships not established	Proposed Plan Table 3.3 objective	

6. Efficiency and effectiveness of the policies, rules and methods

This section sets out an assessment of options to implement proposed Objectives O23, O24 and O25 to maintain or improve water quality in fresh and coastal water bodies. In accordance with section 32(1)(b) of the RMA, this section:

- Identifies reasonably practicable options for achieving the proposed water quality Objectives O23, O24 and O25
- Assesses the efficiency and effectiveness of the provisions in achieving the objectives
- Summarises the reasons for deciding on the provisions

This section also identifies the section 32 reports on specific resource management topics to refer to for an analysis of the tools which also deliver on the proposed objectives for water quality.

This section examines the three following options for a water quality framework to achieve the proposed Objectives O23, O24 and O25 and is structured as follows:

- Option 1: Retaining the status quo
- Option 2: The proposed Plan provisions

These options are not intended to fully implement the NPS-FM. As stated previously in section 3.1.2 of this report, the proposed Plan is the first step on a two-stage process to implement the NPS-FM by 2022. The proposed Plan does not fully implement the NPS-FM, such as Objective CA1 to establish freshwater objectives and set limits to meet these for national and regional values. However, in the interim, the proposed Plan must be consistent with the NPS-FM in particular for this report topic with Objective A2 to maintain or improve water quality overall within a region.

The assessment of provisions in this section considers the purpose of the RMA, the costs and benefits, the efficiency and effectiveness of provisions, the risks of acting or not acting and the overall appropriateness of the overall water quality framework. The costs of some of the proposed Plan provisions are quantified in the more specific assessments reports such as the report, “Section 32 report: Livestock access, cultivation and break feeding” (see other reports listed in Table 4 below). Further, the approach of progressive improvement means that a detailed quantification of costs and benefits cannot be meaningfully undertaken.

Table A4 in the Appendix provides a summary of the analysis of the options to achieve the overall water quality framework directed by Objectives O23, O24 and O25.

6.1 Option 1: Status quo – Four operative regional plans

The status quo offers an ad hoc approach to the management of water quality. In addition to a number of non-statutory programmes (e.g., the Wellington Regional Erosion Control Initiative), water quality is managed through four operative regional plans. The operative regional plans contain, in some cases, policies that recognise the need for integrated management of natural and physical resources. For example, the operative Regional Discharges to Land Plan recognises the interconnection between land and water through its policies, as most policies specifically require consideration of the adverse effects of discharges to land entering groundwater, surface water or coastal water. Such an integration is not, however, always clear or robust. For example the status quo has resulted in an inconsistent and at times poorly developed framework for managing the impacts of stormwater discharges on water quality (see Section 32 report: Discharges to water).

Overall, while the status quo signals that integrated catchment management is a desirable outcome, it has been proven largely ineffective. This is, in part, because the management of soils, discharges to land, discharges to water and the coastal environment are addressed in separate plans with little or no mechanism for integration. The status quo is also inefficient. For example, both the RCP and RFP need to be considered when consenting the clearing of slopes, requiring interpretation of two separate planning frameworks in two separate documents. Further, the status quo does not effectively or efficiently manage cumulative impacts on water quality throughout a catchment and through time.

The status quo planning framework is not structured around clearly articulated outcomes for water quality that provide for aquatic ecosystem health and mahinga kai, contact recreation and Māori customary use outcomes. The status quo also lacks a specified objective framework which takes into account the different character of water bodies, from the top of the catchment to the coastal marine area. The operative planning framework is at best ambiguous about expected outcomes and so provides little guidance as to what effort should be put into achieving improvements in water quality over time. It does not provide a clear framework for the prioritisation of investment in land management actions and infrastructure planning that will achieve an improvement in water quality where the state and pressures on the resource most warrant it.

In this context the status quo does not provide resource users such as business, territorial authorities, individuals and community groups with clarity or certainty about expected water quality outcomes and the locations where these expectations are not yet met. The lack of certainty is not efficient and will not assist in achieving the objectives

As discussed in section 2, the status quo has been associated with a period of relatively stable water quality across the region. Given the regional population growth and land use intensification patterns it can be anticipated that the status quo would result in stable water quality patterns. In this regard the status quo partially meets Objective O23 by effectively maintaining water quality.

However, the status quo will not drive improvement in water quality particularly in areas where water quality is poor (see Tables 2 and 3 in section 5 above). By failing to do so, the status quo does not effectively address the expectations set in statutory instruments such as the RPS and the NZCPS. Furthermore, the current framework does not effectively meet the wider expectations of the community established during consultation surrounding the plan review process which are to work towards improvements in water quality. The status quo would not effectively implement proposed Objectives O23, O24 and O25.

As such, retaining the status quo would not deliver an efficient or effective planning approach. The status quo offers a limited, unintegrated framework that is ineffective and inefficient in contemporary terms across the key areas that impact on water quality, discharges to land, discharges to water and rural land use. The status quo is not the most appropriate approach for the proposed Plan. A summary of this assessment can be found in Table A4 in the Appendix.

6.2 Option 2: Proposed Plan provisions

The proposed Plan provisions present a single, coherent planning framework which links regulatory and non-regulatory provisions with water quality expectations for catchments or water bodies, as set out in proposed Objectives O23, O24 and O25. The framework will also help the achievement of objectives for other values in the proposed Plan, such as suitable drinking water supply, which rely on the maintenance or improvement of water quality.

This option must be considered within the larger framework that uses future variations and plan changes to incorporate catchment-specific water quality limits based on the recommendations from the five whaitua committees, as described in the NPS-FM Implementation Programme (GWRC 2015b) and discussed in the report, "Introduction to the Resource Management Act 1991 Section 32 reports". The provisions in the proposed Plan address a lack of effectiveness in the status quo and its failure to drive improvement in water quality, particularly in areas where water quality is poorer. The option brings together a range of policies, rules and methods that will maintain or improve water quality across the region. This matrix of policies, rules and methods will manage the impacts on water quality from point source discharges to water, discharges to land and rural land use activities. As the preferred option, the relevant policies, rules and methods are set out in Table 4 below.

Table 4: Provisions relevant to Objective O23, O24 and O25

Objectives:	O23: Maintain or improve water quality O24: Contact recreation and Māori use O25: Aquatic ecosystem health and mahinga kai
Policies:	P62: Promoting discharges to land P63: Improving water quality for contact recreation and Māori customary use P64: Mixing waters P65: Minimising effects of nutrient discharges P66: National Policy Statement for Freshwater Management requirements for discharge consents *Also see the following Section 32 reports*: Aquatic ecosystems Ki uta ki tai – mountains to the sea Māori values Recreation, public access and open space
Rules:	*Topic based rules – see the following Section 32 reports:* Beds of lakes and rivers Discharges to land Discharges to water Livestock access, cultivation and breakfeeding Soil conservation Water quantity
Methods:	M6: National Policy Statement for Freshwater Management strategy M8: Te Awarua-o-Porirua Harbour restoration M9: Wairarapa Moana M10: Water quality investigations and remediation actions M12: Increasing sustainable land management practices M27: Improving water quality in priority water bodies M28: Development of good management practice guidelines

The proposed Plan provisions bring together a number of regulatory and non-regulatory approaches that will maintain or improve water quality covering:

- More consistent and detailed controls on discharges to water, particularly in regard to discharges of wastewater and stormwater (e.g. see Rules R50-R53 and R61-R62 and Policies P73-P79 and P80-P83) (see "Section 32 report: Discharges to water")

- Controls on specific rural land uses to maintain or improve water quality (e.g. see Rules R96-R98) (see "Section 32 report: Livestock access, cultivation and break feeding")

- Active promotion of discharges to land rather than into water, such as through a regulatory framework that incentivises the discharge of human effluent to land (e.g., see Rules R77-R80 and Policy P62) (see "Section 32 report: Discharges to land")

- Regional, industry and community partnership programmes to advance good practice management for improving water (e.g., see Methods M12 and M28) (discussed below and in "Section 32 Report: Discharges to land" and "Section 32 Report: Ki uta ki tai")

- Policies and methods to maintain and enhance the mauri of water, including through ensuring adverse effects on mana whenua values of mixing water between catchments are managed appropriately (e.g., Policy P64) (see "Section 32 Report: Māori values")

- The prioritisation of areas and activities where water quality improvement is required in order to provide for contact recreation and Māori customary use and aquatic ecosystem health and mahinga kai (e.g. see Policies P63 and P70 and Methods M8, M9, M12 and M27) (discussed below and in "Section 32 report: Discharges to land")

- A programme of investigations to better understand causes of poorer water quality in order to undertake actions to improve water quality (e.g., see Method M10) (discussed below)

This approach also provides policy direction regarding the management of activities that discharge to fresh water. Under the NPS-FM, until such time as a regional council gives effect to Policies A1 and A2 of the NPS-FM and sets water quality limits for all fresh water, regional councils must include in their plans NPS-FM Policy A4. This policy is included in the proposed Plan as Policy P67.

To further implement the NPS-FM, Method M6 directs that a strategic approach to implementing all parts of the NPS-FM is developed by the end of 2015. This will further inform the Council's implementation programme such as establishing a freshwater accounting system for water takes and discharges, as required by NPS-FM Policy CC1.

Further policy direction for the management of activities for their impact on water quality for contact recreation and Māori customary use and aquatic ecosystem health and mahinga kai is provided through proposed Policies P63 and P70 (respectively). Policy P63 is discussed in section 6.2.2 below. The appropriateness of Policy P70 is assessed as part of the broader package for managing point source discharges to water in the report, "Section 32 Report: Discharges to water". The impact of point source discharges on water is also further directed through Policy P62 of the proposed Plan that seeks better outcomes for water quality through promoting discharges to land.

The proposed Plan provisions offer a coherent and integrated overall approach that achieves the direction of Objectives O23, O24 and O25 in a prioritised and logical way that is based on a clear articulation of the state and pressures on the resource. It is consistent with Objective O1 that applies the principle of ki uta ki tai for the integrated management of land and water. This approach recognises the benefits of utilising land and water resources (Objective O3) but also the need to protect mauri (Objective O2), recognise intrinsic values (Objective O4) and provide water suitable for aquatic ecosystem health and

mahinga kai, contact recreation and Māori customary use, and for the health needs of people (Objective O5).

The regulatory methods effectively and efficiently contribute to the maintenance and/or improvement of water quality by managing the impacts of pathogens, nutrients, sediment and toxicants. This is done by controlling earthworks, vegetation clearance, fertiliser use, animal effluent disposal, cultivation through set-backs, break-feeding, livestock access to water, the disposal of human waste, the disposal of stormwater, leachate loss from silage pits, composting and the disposal of dead animals. For details of the efficiency and effectiveness of these approaches, see the following section 32 reports:

- Discharges to water
- Discharges to land
- Livestock access, cultivation and breakfeeding
- Soil conservation

The following sections look at the key parts of the proposed Plan approach to water quality, including discussing the efficiency and effectiveness of each approach. These key parts are:

- Maintaining or improving water quality for safeguarding aquatic ecosystem health and mahinga kai (section 6.2.1)
- Maintaining or improving water quality for providing for contact recreation and Māori customary use (section 6.2.2)
- Consideration of a water quality interim limits framework (section 6.2.3)

A summary of the overall efficiency and effectiveness of the preferred approach (Option 2) in provided in section 6.3 of this report, including the costs and benefits of the approach, the risks or acting or not acting and the overall appropriateness of this approach.

6.2.1 Maintaining or improving water quality for safeguarding aquatic ecosystem health and mahinga kai

This section discusses the proposed Plan provisions relating to water quality and ecosystem health. The key provisions are set out in Table 5 below.

(a) Option 1 – Status quo

Across the region the status quo has been associated with a period of relatively stable water quality, as discussed in section 2 of this report. Given the low population growth and slow rate of land use intensification expected across the region, the status quo is expected to result in relatively stable water quality patterns and in this regard it should achieve Objective O23, by effectively maintaining water quality.

However, as discussed in section 6.1 above, the status quo policies, rules and methods in the operative regional plans do not give full effect to the policy directions in the RPS or the NPS-FM, nor do they give full effect to the NZCPS. The status quo approach is not the most effective and efficient means of achieving the proposed Plan Objectives O23 and O25 to maintain or improve water quality in order to safeguard aquatic ecosystem health and mahinga kai. Table 5 provides a summary of the costs, benefits and overall effectiveness and efficiency of the status quo option.

Table 5: Efficiency and effectiveness of status quo option for water quality for safeguarding aquatic ecosystem health and mahinga kai

Option 1 – Status quo	Benefits	Costs	Risks and information status
	Economic growth and employment growth unchanged. May maintain overall water quality at current state for the region. No significant additional cost to Council. Minimal transition costs for Council and resource users.	Little or no direct impacts on economic growth or regional employment. No improvement in water quality in areas currently with poorer water quality. Possible water quality degradation in some areas. No clear programme for improving water quality to improve environmental, cultural and social outcomes.	Risk of failure to meet fully the intention of statutory obligations – moderate. Risk to future resource users from not addressing identified water quality issues – moderate. Uncertainty of community expectations around water quality improvements – potential for misaligned investment or actions to improve.
Overall efficiency and effectiveness of option	The status quo option does not effectively address community expectations and requirements of statute. The status quo will not give full effect to the RPS, NPS-FM or the NZCPS. In addition, maintaining the status quo offers no efficiency gains as it would continue the unintegrated planning based around separate activities and effects. The status quo provides no improvement in the certainty of expectations for business and investments.		

(a) Option 2 – Proposed plan provisions for water quality for safeguarding aquatic ecosystem health and mahinga kai

The proposed Plan approach to maintaining or improving water quality to safeguard aquatic ecosystem health and mahinga kai in fresh and coastal waters across the Wellington Region is an integrated package. As noted earlier, this option must be considered within the larger framework that uses future variations and plan changes to incorporate catchment-specific water quality limits based on the recommendations from the five whaitua committees, as described in the NPS-FM Implementation Programme (GWRC 2015b).

Table 6 below lists the key policies, rules and methods in the proposed Plan relevant to maintaining or improving water quality for aquatic ecosystem health and mahinga kai. As part of the broader water quality framework, the overall efficiency and effectiveness of this policy approach is summarised in Table A4 in the Appendix.

Table 6: Provisions relevant to maintaining or improving water quality for aquatic ecosystem health and mahinga kai

Objectives:	O23: Maintain or improve water quality O25: Safeguard aquatic ecosystem health and mahinga kai
Policies:	P62: Promoting discharges to land P63: Improving water quality for contact recreation and Māori customary use P65: Minimising effects of nutrient discharges P66: National Policy Statement for Freshwater Management requirements for discharge consents P70: Managing point source discharges where aquatic ecosystem health and mahinga kai outcomes are not met P96: Managing land use P101: Management of riparian margins
Methods:	M8: Te Awarua-o-Porirua Harbour restoration M9: Wairarapa Moana M10: Water quality investigations and remediation actions M12: Increasing sustainable land management practices M28: Development of good management practice guidelines

The proposed Plan provisions introduce a range of new or strengthened regulations including covering specific agricultural land use activities (e.g., Rules R96-R98), supported by a range of non-regulatory methods (e.g., Methods M10, M12 and M28). Agricultural land use activities contribute contaminants affecting aquatic ecosystem health and mahinga kai, including faecal contamination of water from livestock, sediment from overland flows and stream bank erosion from livestock access, and nutrient contamination from different agricultural and horticultural land uses.

This regulatory framework contributes to maintaining fresh and coastal water quality, most particularly from the impacts of nutrient runoff and leaching reaching ground and surface water, and from the impact of sedimentation of water bodies. Regulatory controls in the proposed Plan provisions include controls on earthworks, vegetation clearance, fertiliser use, animal effluent disposal, cultivation set-backs, break-feeding, livestock access to water, the disposal of waste, leachate from silage pits, composting and the disposal of dead animals. As noted above, the efficiency and effectiveness of these approaches can be found in the following Section 32 reports:

- Soil conservation
- Discharges to land
- Livestock access, cultivation and breakfeeding

A regulatory approach for managing effects on water quality and ecosystem health is also proposed for discharges to water. This approach is discussed in the report, "Section 32 report: Discharges to water". In summary, this approach provides a test in proposed Policy P70 for all new and existing point source

discharges into water so that they either maintain or improve water quality for aquatic ecosystem health and mahinga kai, depending on how whether the receiving water body meets the objectives of the proposed Plan in Tables 3.4-3.8.

The proposed Plan provisions bring together a number of non-regulatory funded programmes covering:

- Regional industry and community partnership programmes to advance good practice management (Method M12 and M28)

- Prioritisation of intervention programmes (see Table 7 below) to progressively improve land use management practices at identified locations and in catchments:

  - To ensure that water quality is maintained in area or sites of known or likely poor water quality

  - To improve water quality in order to contribute to the maintenance and improvement of aquatic ecosystem health and mahinga kai

- Investigation and development of restoration programmes to address legacy issues where appropriate (see Table 7 below)

Policy P65 in the proposed Plan provides direction to minimise the adverse effects of nutrient discharges on water and to achieve the goals set out by Objectives O23 and O25 in relation to agricultural land use. This policy applies to a range of agricultural activities that impact on water quality, including both discharges and land use practices. The policy establishes the expectation that good management practices are considered the baseline for rural land use for all agricultural activities and systems in the region. Policy P65 is an effective approach for managing the impacts of rural land use practice that affect water quality aimed at maintaining, and over time improving, water quality where required. It does this by directing regulatory controls over a variety of rural land uses that affect water quality, and providing for targeted programmes to change current land use practices.

In the proposed Plan provisions, nutrient losses to water from agricultural land use practices are efficiently managed through a system of non-regulatory farm planning and land management tools that examine and address aspects of individual farm practices on a case-by-case basis (Methods M10, M12 and M28). This non-regulatory approach introduces changes to farm practices in a coordinated way in order to manage effects on water quality. These are enhanced advisory and support efforts compared to the status quo. They will involve community, industry and iwi partnerships and aim to expand the current use of good land use practices.

The proposed Plan provisions introduce a number of new and expanded programmes to address nutrient losses into water and land use practice changes in the context of agricultural systems (see Method M12). These additional actions are aimed at either restoration or gradual reduction in nutrient and

sediment levels in priority catchments identified as areas for improvement, based on the current pressures and state of the resource. Funding for the expansion or establishment of these programmes has been established under WRC's draft Long Term Plan 2015-2025 (GWRC 2015a). These additional methods, which form the bulk of the catchment-specific actions, are prioritised on the basis of the state and pressures, current and potential, on the resource (see Table 7 below).

Riparian management

Policy P101 also addresses Objective O25 as it promotes the management of riparian margins to reduce sediment and nutrient runoff into the water body. This policy is supported by Method M12 and funding has been allocated through the WRC Long Term Plan 2015-2025 (GWRC 2015a) to implement a programme that encourages sustainable land use practices.

Restoration programmes

The proposed Plan includes two non-regulatory methods for improving water quality for the purpose of restoring aquatic ecosystem health. Te Awarua-o-Porirua Harbour restoration programme (Method M8) provides for progressive improvement in the water quality of Te Awarua-o-Porirua Harbour through the co-ordinated actions of the WRC, in partnership with Ngāti Toa, Porirua City Council, Wellington City Council, Wellington Water Limited and stakeholders. Together the investments in infrastructure, erosion control, contaminant mitigation, planting and weed control are aimed at:

- Reducing the rate of sediment entering the harbour
- Reducing the rate of pollutants (including nutrients) entering the harbour
- Restoring the estuarine and fresh water environments, associated with the harbour

These actions are guided by the specific targets and outcomes detailed in the Porirua Harbour and Catchment Strategy and Action Plan (PCC 2012) and will focus on reducing non-point sources of water quality contaminants from both urban and rural land use. The programme is funded from existing budgets of the respective partners.

The proposed Plan Method M9 directs a programme of work with local iwi and the community to improve the water quality of Wairarapa Moana and to protect and restore the habitats of indigenous plants and animals.

Management actions to maintain or improve water quality

Water quality in rural areas will be maintain or improved as a contribution to meeting Objectives O23, O24 and O25 through the proposed Methods M12 (to increase sustainable land use practices) and M28 (developing good management practice). These methods will be implemented across a number of sites or catchments through the coordinated actions of the WRC and landowners in partnership with iwi, central government agencies, agricultural stakeholder groups, and territorial authorities. Funding for these programmes

has been established under WRC's draft Long Term Plan 2015-2025 (GWRC 2015a).

Investigations to maintain or improve water quality

Method M10 of the proposed Plan requires WRC to undertake a series of investigations, followed as appropriate by remedial action planning to improve water quality. The sites identified in Method M10 are those sites identified in Table 2 as not meeting the water quality expectations of Objectives O24 and O25 of the proposed Plan, but where the nature of the water quality issue and its causes are not fully understand. These investigations will be funded from existing budgets and will be undertaken in partnership with relevant iwi, territorial authorities, government agencies, landowners and other associated stakeholders. Timeframes for the completion of each investigation have been identified in Method M10 to complement the requirements of each relevant whaitua process.

Summary of actions to improve water quality

Table 7 contains a summary of the key actions that will be undertaken to progressively improve water quality for aquatic ecosystem health and mahinga kai in water bodies identified in Table 2 (section 5 of this report).

Table 7: Actions to progressively improve water quality for aquatic ecosystem health and mahinga kai

Location/test site	Issue/impact	Actions – based on certainty/information risk and severity of issue/impact	Proposed Plan provisions
Mangatarere groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Continue and expand farm environment plan programme across the catchment – programme commenced in 2013	Policies P65 and P101, Method M12
Taratahi groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Package of actions for Parkvale/Taratahi groundwater and surface water sub-catchment including; • Investigations to confirm factors affecting water quality, completed by 2017, and • Develop and implement an applicable remediation/containment action plan by 2018 • Strategic introduction of farm environment plan from 2018 onwards	Policies P65 and P101, Methods M10 and M12
Parkvale Stream	Unlikely to meet proposed Plan periphyton objective		
	Fails NOF bottom line for nitrate toxicity		
	Likely to fail NOF bottom line for periphyton		
Te Ore Ore groundwater	Groundwater nitrate levels failed to meet drinking water standards in 2014 sample year – proximity to known drinking water source	Investigate and confirm issues by 2017 and if applicable develop and implement remediation action plan	Method M10

Location/test site	Issue/impact	Actions – based on certainty/information risk and severity of issue/impact	Proposed Plan provisions
Tauherenikau groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Investigate and confirm issues by 2017 and if applicable develop and implement remediation action plan	Method M10
Martinborough groundwater	Elevated groundwater nitrate levels over longer term – possible ecosystem health effects	Investigate and confirm issues by 2017 and if applicable develop and implement remediation action plan	Method M10
Kopuaranga Stream	Unlikely to meet proposed Plan periphyton objective Likely to fail NOF bottom line for periphyton	Priorities catchment for riparian planting and stock exclusion through farm based riparian management plans – strategic implementation aiming for 50% of catchment involved by 2025 – unless alternate action resulting from whaitua process	Policies P65 and P101, Method M12
Huangarua River	Unlikely to meet proposed Plan periphyton objective Likely to fail NOF bottom line for periphyton	Priorities catchment for riparian planting and stock exclusion through farm based Riparian Management Plans – strategic implementation aiming for 50% of catchment involved by 2025 – unless alternate action resulting from whaitua process	Policies P65 and P101, Method M12
Whangaehu River	Poor macroinvertebrate community health	Investigate and confirm issues by 2018 and if applicable develop and implement remediation action plan	Method M10
Lake Wairarapa	Unlikely to meet proposed Plan nutrient objective. In a eutrophic to supertrophic state but stable state over past 20 years. Fails NOF bottom line for phosphorus	Continue Wairarapa Moana programme (commence in 2012) developing responses for nutrient interception; introduce farm environment plan and riparian/wetland management programme; controls on wastewater	Policies P65, P80 and P101, Method M10 and M12
Taueru River	Unlikely to meet proposed Plan periphyton objective Likely to fail NOF bottom line for periphyton	Priority catchment for riparian planting and stock exclusion through farm-based riparian management plans – strategic implementation aiming for 50% of catchment involved by 2025	Policies P65 and P101, Method M12
Whareama estuary	Unlikely to meet proposed Plan objective, excessive mud content in sediments	Priority catchment for riparian planting, sediment control and stock exclusion	Policies P65 and P101, Method M12
Awhea River	Poor macroinvertebrate community health	Investigate and confirm issues by 2019 and if applicable develop and implement remediation action plan	Method M10
Te Horo groundwater	Elevated nitrate levels over longer term – possible ecosystem health effects	Investigate and confirm issues by 2018 and if applicable develop and implement remediation action plan	Method M10

Location/test site	Issue/impact	Actions – based on certainty/information risk and severity of issue/impact	Proposed Plan provisions
Ōtaki groundwater	Elevated nitrate levels over longer term – possible ecosystem health effects	Investigate and confirm issues by 2018 and if applicable develop and implement remediation action plan	Method M10
Mangaone Stream	Poor macroinvertebrate community health Unlikely to meet macrophyte plan objective	Investigation and confirm issues by 2018 and if applicable develop and implement remediation action plan	Method M10
Mangapouri Stream	Poor macroinvertebrate community health Unlikely to meet macrophyte plan objective	Investigate and confirm issues by 2018 and if applicable develop and implement remediation action plan	Method M10
Lake Waitawa	Unlikely to meet proposed Plan narrative objectives for total nitrogen, total phosphorus and phytoplankton Likely to fail NOF bottom line for phytoplankton	Investigate and confirm issues by end 2016 and if applicable develop and implement remediation action plan. Controls on wastewater discharge	Policy P80, Method M10
Te Awarua-o-Porirua Harbour (Pauatahanui and Onepoto arms)	Unlikely to meet proposed Plan objectives, high sedimentation rates, excessive mud content	Priorities catchment for riparian planting and stock exclusion through farm based riparian management plans; urban earthworks controls and forestry controls	Policies P65 and P101, Methods M12 and M19
Waiwhetu Stream	Poor macroinvertebrate community health	Investigation and confirm issues by 2018 and if applicable develop and implement remediation action plan	Method M10

Efficiency and effectiveness

The provisions for maintaining or improving water quality for aquatic ecosystem health and mahinga kai in the proposed Plan, both across target catchments and more widely, are considered to be both efficient and effective, as:

- The combination of regulatory and non-regulatory methods allow the multi-dimensional aspects of water quality impacts resulting from agricultural land use activities and point source discharges to be managed coherently

- The response is commensurate with regional trends in water quality monitoring and a lack of foreseeable changes in the rate of land use intensification

- Additional Council and resource user costs are focused on locations where the state and pressures on the resource indicate that the investment of additional effort will allow for improvements in water quality

In relation to agricultural land uses, wider administrative efficiencies are also gained from the introduction of tools such as farm-based environment plans. Introducing these tools through a non-regulatory approach helps to establish practices (e.g., record keeping and land use management practices) that will form the basis of good management practices to manage within a later limits-based, regulatory regime, as will be introduced through each whaitua process. Non-regulatory engagement and farm planning tools become a transition process for water quality limits regimes by building skills, capacity and familiarity among Council staff and within resource user communities. This increase in capacity and skill base comes at an additional financial cost, but one which is, in part, the cost associated with the implementation of the NPS-FM (see Table 8 below).

The efficiency and effectiveness of the proposed Plan provisions relating to the discharge of contaminants into water is discussed in the repot, "Section 32 report: Discharges to water".

Table 8: Summary of efficiency and effectiveness of the proposed Plan provisions for water quality for aquatic ecosystem health and mahinga kai

Option 2 – aquatic ecosystem health and mahinga kai	Benefits	Costs	Risks and information status
	Economic activity in the rural economy is expected to increase in a minor way. Minor increase in employment, associated with additional public and private expenditure. Maintain overall water quality at current state for the region. Improvement in aquatic ecosystem health and mahinga kai over time, associated with improvements in water quality in target catchments with poor water quality. Greater certainty with identified programme for improving water quality to improve environmental, cultural and social outcomes. Potential for community and landowner collective actions for improvement. Improved skills, capacity and familiarity with farm-based tools required under coming nutrient discharge limits framework	Additional cost to WRC to support changes in land use practices. Costs to WRC to undertake investigations and develop action plans for improving water quality in areas identified in Table 2. Additional costs for landowners as they implement changes in land use practices.	Information is incomplete, so some specific land use practice changes may be unwarranted or unnecessary – these risks are mitigated by the publicly funded support for change and the investigation programmes to be undertaken. Land users see obligations as too onerous and support as being insufficient and do not participate – low.

Overall efficiency and effectiveness of option	The proposed Plan provisions offers the most efficient and effective approach to address nutrient losses from agricultural land use. This matrix of policies and methods is consistent with approaches used throughout the proposed Plan to manage the impacts on water quality of point source and urban land use activities. In this respect it offers a coherent and integrated overall approach that is consistent with the direction of Objectives O23 and O25. The approach prioritises expenditure to locations where the state and pressures on the resource indicate that the precautionary investment of additional effort will allow for improvements in water quality. It advances a transition process building skills, capacity and familiarity, among Council staff and within resource user communities, with the range of tools required to operate under the forthcoming limits regime. This increase in capacity and skill base comes at an additional financial cost, which is in part, the cost associated with the implementation of the NPS-FM.

6.2.2 Maintaining or improving water quality for providing for contact recreation and Māori customary use

As discussed in the previous sections 2 and 3.2.3 above, water quality which is suitable for contact recreation and for people to come into contact with for cultural and spiritual purposes has been identified as a key goal for the region.

Contamination of water by pathogens can occur in a number of ways, including:

- From livestock waste, such as
  - Livestock access to waterways (direct defecation into water)
  - Overland flow from grazed paddocks
  - Overland flow from spreading collected effluent, including during rainfall and via land drainage systems
- From urban infrastructure, such as
  - Stormwater network cross-contamination with wastewater
  - Contaminated stormwater (e.g. from faecal matter on surfaces)
  - Wastewater network and pump station overflows and breaks
  - Wastewater treatment plant discharges

Some rivers and lakes in the Wellington region are no longer suitable for swimming or other forms of contact recreation at certain times and no longer offer suitable conditions for a range of customary uses such as mahinga kai because of pathogen contamination. Pathogens can also affect water used for livestock drinking water needs. Table 3 (section 5 of this report) summarises the key areas where water quality is not suitable for contact recreation and Māori customary use as anticipated by the proposed Objective O24.

The discussion below examines policies, methods and schedules in the proposed Plan for how they implement Objective O23 to maintain or improve

water quality and Objective O24 to provide for to contact recreation and Māori customary in fresh and coastal waters (see Table 9).

(a) Option 1: Status quo

As discussed in Section 6.1, the status quo policies, rules and methods in the operative regional plans do not fully give effect to the water quality policy directions in the RPS or the NPS-FM, nor do they fully give effect to the NZCPS. The costs of the status quo approach are to continue to place the costs of impacted water quality on the community by restricting the ability to use water safely for recreation, cultural and spiritual uses. Overall, the status quo approach is not the most effective and efficient means of achieving the proposed Plan Objectives O23 and O24 to maintain or improve water quality in order to provide for contact recreation and Māori customary use.

(b) Option 2: Maintain water quality or improve in identified areas

The second option examined here is the package of policies, rules, methods and Schedules to maintain water quality overall and identify areas for improvement. As noted earlier, this option must be considered within the larger framework that uses future variations and plan changes to incorporate catchment-specific water quality limits based on the recommendations from the five whaitua committees, as described in the NPS-FM Implementation Programme (GWRC 2015b) and discussed in the report, "Introduction to the Resource Management Act 1991 Section 32 reports".

Proposed Objectives O23 and O24 direct that water quality is maintained as a minimum and identifies water bodies where, in some instances, improvement of water quality is required in order to meet statutory requirements and community expectations for contact recreation and Māori customary use. As discussed above, the water quality and biological attributes to be met are identified in the proposed Plan Tables 3.1-3.3 of Objective O24.

Table 9 shows the provisions in the proposed Plan that implement Objectives O23 and O24. The overarching approach for managing water quality for contact recreation and Māori customary use (Policies P62 to P64) is described here and an analysis of the efficiency and effectiveness of these provisions is provided below.

The efficiency and effectiveness of the proposed Plan provisions relating to management of the activities likely to impact water quality for contact recreation and Māori customary use (stock access to water and point source discharges contaminated with faecal material) is provided in the reports, "Section 32 report: Livetock access, cultivation and break feeding" and "Section 32 report: Discharges to water" (respectively).

Table 9: Provisions relevant to water quality and providing for contact recreation and Māori customary use

Objectives:	O23 Maintain or improve water quality O24 Contact recreation and Māori customary use
Policies:	P62 Promoting discharges to land P63 Improving water quality for contact recreation and Māori customary use P65 Managing land use P66 National Policy Statement for Freshwater Management discharges policy *Other relevant policies:* P10 Contact recreation and Māori customary use P76 Minimising wastewater and stormwater interactions P77 Assessing resource consents to discharge stormwater containing wastewater P81 Minimising and improving wastewater discharges
Rules:	R50: Stormwater from a local authority network at plan notification R51: Stormwater from a local authority network two years after plan notification R61: Existing wastewater discharges R95: Breakfeeding R96: Cultivation and breakfeeding R97 Access to the beds of surface water bodes by livestock R98: Livestock access to the beds of surface water bodies
Methods:	M2: Kaitiaki information and monitoring strategy M10: Water quality investigations and remediation actions M27: Improving water quality in priority water bodies
Schedules	H1: Regionally significant contact recreation water bodies H2: Priorities for improvement for contact recreation and Māori use N: Stormwater management strategy

Summary of proposed Plan

The areas of fresh and coastal water where water quality needs to be improved in order to meet the objectives for contact recreation and Māori customary use are set out in Table 3 (section 5). A summary of this information, including the provisions in the proposed Plan to meet Objectives O23 and O24 are described in the following table (Table 10).

Table 10: Summary of actions to improve water quality for contact recreation and Māori customary use

Location	Issue/impact	Relevant proposed Plan provision(s)
Elevated faecal contamination		
Te Awa Kairangi/Hutt River	Fails proposed Plan pathogen objective for primary contact recreation (at Melling Bridge), is a regionally significant contact recreation water body	Policy P63, Schedule H1 and H2
Wainuiomata River	Fails proposed Plan pathogen objective for primary contact recreation at (Richard Prouse Park), is a regionally significant contact recreation water body	
Te Awarua-o-Porirua Harbour	Fails proposed Plan pathogen objective for contact recreation (at Rowing Club, Onepoto Arm)	
Plimmerton	Fails proposed Plan pathogen objective for contact recreation (at South Beach)	
Titahi Bay	Fails proposed Plan pathogen objective for contact recreation (at South Beach access road)	
Island Bay	Fails proposed Plan pathogen objective for contact recreation (at Derwent Street, Reef Street and Surf Club)	
Owhiro Bay	Fails proposed Plan pathogens objective for contact recreation	
Wellington Harbour (Port Nicholson) waterfront	Fails proposed Plan pathogen objective for contact recreation (at Harris Street, Hunter Street and Tory Street)	
Karori Stream	Fails NOF bottom line for *E.coli* outcome for secondary contact with water	Policy P63, Method M27, Schedule H2
Mangapouri Stream	Equal to NOF bottom line for *E.coli* outcome for secondary contact with water	Methods M10 and M27, Policy P63, Schedule H2
Elevated cyanobacteria (toxic algae)		
Lake Waitawa	Fails proposed Plan planktonic cyanobacteria objective, likely to fail NOF bottom line for planktonic cyanobacteria	Method M10
Te Awa Kairangi/Hutt River	Unlikely to meet proposed Plan benthic cyanobacteria narrative objective	Method M10
Ruamāhanga River	Unlikely to meet proposed Plan benthic cyanobacteria narrative objective (particularly at Kokotau and The Cliffs)	Method M10
Waipoua River	Unlikely to meet proposed Plan benthic cyanobacteria narrative objective (Colombo Road)	

For fresh water, proposed Plan Schedule H1 identifies water bodies to be managed for primary contact recreation purposes because of their regionally significant recreation values. These water bodies have been identified from the

RPS (see Table 15, Appendix 1), which lists rivers and lakes with significant recreation and amenity values that should be maintained or enhanced under RPS Policy 19. Of the rivers and lakes identified in Table 15 of the RPS, those with identified uses that involve 'primary contact' with water (e.g. swimming, boating, kayaking, canoeing) activities are listed in the proposed Plan in Schedule H1.

All fresh water bodies not named in Schedule H1 are to be managed to maintain water quality and to be improved to be suitable for secondary contact with water where they currently do not meet the objective for secondary contact in Table 3.2 of Objective O24.

Objective O24 also directs that all coastal water is managed to be suitable for primary contact with water, except for the area of water within the Commercial Port Area (shown on Maps 32, 33 and 34 of the proposed Plan). This exception means that water quality for contact recreation and Māori customary use must be maintained but water quality within the delineated area is not required to be improved to meet the primary contact objective in Table 3.3 of Objective O24 if it is not currently meeting it. The exception is appropriate as access to the coastal water within the Commercial Port Area is restricted due to the health and safety risks of an active port and swimming is not allowed within this area except with permission under the Wellington Regional Navigation and Safety Bylaws (GWRC 2009).

Schedule H2 of the proposed Plan lists two sets of 'priority' water bodies which require improvement in order to provide water quality suitable for primary contact recreation and secondary contact with water in relation to faecal contamination.

The 'first priority' water bodies are those that have been identified as failing to meet the NOF pathogens bottom line or minimum acceptable state for either primary or secondary contact with fresh water, or are known coastal recreation sites recognised not to meet the water quality outcomes for faecal contamination for primary contact in coastal water (see Greenfield et al. 2015). These 'first priority' water bodies are shown in Table 10 with the actions proposed to improve water quality.

'Second priority' water bodies are also identified in Schedule H2 as fresh water bodies identified as having water quality below the NOF pathogen minimum acceptable state for secondary contact when using the 95th percentile sample statistic. Naming these second priorities for improvement provides a mechanism for ensuring that water bodies where the water quality is approaching the national bottom line, but is not yet below it, are considered appropriately in resource consent application processes.

Water quality for contact recreation and Māori customary use is also impacted by cyanobacteria (toxic algae), which can cause rashes and illness in people and can be lethal to dogs when ingested. Table 10 lists the four water bodies with identified benthic or planktonic cyanobacteria levels that do not meet the objective for the Plan in Table 3.1 and 3.2 of Objective 24. This includes Lake

Waitawa, which also does not meet the NOF bottom line for planktonic cyanobacteria in lakes.

Proposed Policy P63 sets out how water quality for contact recreation and Māori customary use should be improved. Fresh water bodies that fail to meet the national minimum acceptable state for secondary contact are the most polluted in relation to faecal contaminants and as such the proposed Plan contains a non-regulatory method (Method M27) to establish means to improve water quality. Policy P63(b) and (c) provide direction for the management of stormwater and wastewater discharges that enter water that must be given particular regard to in prioritising improving the quality of discharges in order to meet the plan objectives.

Policy P63(b) indicates that a key management tool for the improvement of water, the stormwater management strategy (as set out in Schedule N), should apply the priorities in Schedule H to the prioritising of improvement of water quality from impacts from the stormwater network. This is a key link between management efforts and the expected water quality outcome. For a discussion of how stormwater and wastewater provision give effect to the proposed Plan Objectives O23 and O24 see the report, "Section 32 report: Discharges to water".

The areas not meeting or not likely to meet the objectives for cyanobacteria are addressed through a non-regulatory method (Method M10). This method establishes a strategic approach for further investigations into understanding the causes and identifying options for improving water quality in relation to toxic cyanobacteria if appropriate, noting that WRC has been undertaking investigations into cyanobacteria in Te Awa Kairangi/Hutt River catchment in the 2014/2015 year.

As well as the water quality element of contact recreation and Māori customary use, the proposed Plan provisions also direct that the recreational values of the coastal marine area, rivers, lakes and natural wetlands are maintained and enhanced (see Objective O9). The proposed Plan provisions provides further direction to resource consent applications on contact recreation and Māori customary use values through Policy P7, which recognises the benefits of using land and water for contact recreation and Māori customary use, and Policy P10, which sets out that activities with effects on contact recreation and Māori customary use should have regard to impacts on water for those purposes. An assessment of these non-water quality elements of recreation are assessed in the report, "Section 32 report: Recreation, public access and open space".

Efficiency and effectiveness

The approach under Policy P63 and Schedule H is efficient at achieving the proposed Objectives O23 and O24 as it provides certainty and clarity as to which fresh and coastal water bodies must have water quality improved. Further, the proposed provisions provide direction to the management of the activities that most affect water quality in these water bodies (e.g. stormwater and wastewater network discharges). This meets the requirements of the NZCPS to give priority to improving degraded water quality by identifying them in regional plans and identifying provisions to improve water quality (Policy 21).

The approach is consistent with the approach in the NPS-FM and is an effective first step at identifying priorities for improvement that dischargers to water need to respond to over time such as through progressive improvement of wastewater and stormwater discharges. Further, this approach is effective at achieving the aim of RPS Policy 19 that recreation values in rivers and lakes are maintained or enhanced. Naming the fresh water bodies identified in the RPS as having regionally significant primary contact recreation values in Schedule H1 is an appropriate way to identify and provide for these significant values.

The costs of improving water quality in the fresh and coastal water bodies identified in Schedule H2 have not been established as part of this section 32 report. Instead, the proposed Plan provisions set out appropriate tests for the management of activities that impact faecal contamination of water, particularly of the discharge of wastewater and stormwater to water, through policies that require dischargers to provide information on how progressive improvement will occur.

Appropriateness

The proposed approach provides a robust framework that provides direction on resource consent applications for activities that impact water quality for contact recreation and Māori customary use. The proposed Plan approach will reduce the ongoing impact of poor water quality on the important values the community associates with the safe and healthy use of fresh and coastal water. The fresh and coastal water bodies identified for improvement in Schedule H2 ensure the overall policy framework to improve impacted water quality is robust and in alignment with the objectives and environmental outcomes anticipated by the proposed Plan.

The following table summarises the efficiency and effectiveness assessment for this option.

Table 11: Summary of efficiency and effectiveness of the proposed Plan provisions for water quality and contact recreation and Māori customary use

Option 2 – contact recreation and Māori customary use	Benefits	Costs	Risks and information status
	Improved water quality for cultural, spiritual and recreational uses over time in prioritised catchments. Maintain overall water quality at current state for the region. Greater certainty with identified programme for improving water quality to improve environmental, cultural and social outcomes. Minor increase in employment, associated with additional public	Increased costs to resource users, particularly local authorities, as they implement changes to reduce wastewater contamination of water. Improvement not immediate, some values continue to be compromised in the short term.	Information is incomplete, so causes of problems and best methods for improvement are not yet identified. This risk is mitigated by a progressive improvement approach particularly implemented through policy direction for wastewater and stormwater management and the progressive roll out of subsidised stock exclusion programmes. Resource users see obligations as too onerous and support as being insufficient and do not

	and private expenditure. Community and landowners are seen as collectively taking responsibility to improve water quality.		participate – low.

Overall efficiency and effectiveness of option	The proposed Plan for water quality for contact recreation and Māori customary use provides a robust framework that provides direction on resource consent applications for activities that impact water quality. The proposed Plan approach will reduce the ongoing impact of poor water quality on the ability for the regional community to have safe and healthy contact with fresh and coastal water. The proposed Plan provisions offers the most efficient and effective approach to address faecal contamination from multiple land uses and discharges. It offers a coherent and integrated overall approach to effectively implement proposed Objectives O23 and O24. The approach prioritises expenditure to locations where the state and pressures on the resource indicate that the precautionary investment of additional effort will allow for improvements in water quality. Improvements come at increased financial cost, though these costs are in part, the cost associated with the implementation of the NPS-FM.

6.2.3 Consideration of interim water quality limits

To identify the most effective and efficient option for managing the impacts on water quality, it is appropriate to consider an interim water quality limits framework. A water quality limit, as described in the NPS-FM, is the maximum amount of resource use available that allows for an identified objective to be met. Water quality limits are typically implemented by allocating an amount of a contaminant to resource users (e.g,. nitrogen that can leach through soils from a land use) or it may be a control on an activity or expansion of an activity itself (e.g., restriction on land use conversion).

Under the NPS-FM, the WRC must set water quality limits for all fresh water bodies within the Wellington Region by 2025. WRC's NPS-FM implementation programme (GWRC 2015b), as required by NPS-FM Policy E1, will progressively set water quality limits through the community, collaborative whaitua process in each of the region's five whaitua. This programme shall be completed by 2022.

Therefore, any option to introduce some form of water quality limits in the proposed Plan would be an interim regime until water quality limits are progressively set through each whaitua process over the next seven years.

The Third Report of the Land and Water Forum (LAWF 2012) provides guidance on when an 'interim limit' should be applied ahead of a water quality objectives and limits-setting process such as the whaitua process. This includes where resource pressure from existing land uses is great and/or where rapid land use change is anticipated before freshwater objectives and a water quality limits framework are developed.

Recommendation 23 of the report suggests the use of an interim limits regime where:

> *(a) the requirements of national instruments are at risk, and*
>
> *(b) the catchment has not already been prioritised for early collaborative limit-setting processes, and*
>
> *(c) the current suite of industry, community and council programmes is assessed as insufficient to manage the risk of significant impacts, and*
>
> *(d) existing regional plan provisions are not adequate, and*
>
> *(e) the resource is under pressure from existing or anticipated use* (LAWF 2012, p33)

The five matters identified in Recommendation 23 provide a useful test when considering whether an interim water quality limits regime is suitable appropriate for application in the proposed Plan.

(a) the requirements of national instruments are at risk

The most critical national instrument to consider against this criterion is the NPS-FM itself. The absence of interim limits for water quality does not put at risk the implementation of the NPS-FM if a progressive implementation programme has been adopted by a council in accordance with NPS-FM Policy E1. WRC has identified that it will progressively implement the NPS-FM and complete this task by 2022, ahead of the required timeframe of 2025 (see GWRC 2015b).

The proposed Plan provisions (Option 2) appropriately gives effect to the objectives of the NPS-FM ahead of the progressive implementation programme being completed. The mixture of non-regulatory and regulatory methods in the proposed Plan option to implement the proposed Plan Objectives O23, O24 and O25 also provide for:

- Safeguarding ecosystem health and the health of people and communities from secondary contact with water (NPS-FM Objective A1), and

- Maintaining or improving the overall water quality of fresh water in the region (NPS-FM Objective A2)

The other national instruments to consider are the NZCPS and the National Environmental Standards for Sources of Human Drinking Water (the NES-Drinking Water). The NZCPS is not at risk of not being given effect to in the absence of an interim water quality limits regime. The proposed Plan provisions, assessed in section 6.2 of this report, give effect to the NZCPS to maintain or enhance water quality (NZCPS Objective 1) and to identify and improve areas of degraded water quality in accordance with NZCPS Policy 21.

The NES-Drinking Water is appropriately given effect to in the proposed Plan through specific policies, rules and methods relating to the management of effects of discharges of contaminants on group and community drinking water

supply protection areas (see "Section 32 report: Discharges to water" and "Section 32 report: Discharges to land" for the assessment of these provisions). It is not considered that the NES-Drinking Water is at risk in the absence of a water quality limits regime.

(b) the catchment has not already been prioritised for early collaborative limit-setting processes

The proposed order for establishing each whaitua committee is described in Table 1 (section 3.1.2 above). In arriving at this order a precautionary approach was applied based on the state and pressures on water resources (see GWRC 2012). This approach identified the Ruamāhanga and Te Awarua-o-Porirua whaitua as the two whaitua under greatest water resource pressure. The Ruamāhanga Whaitua Committee commenced in December 2013 and Te Awarua-o-Porirua Whaitua Committee in January 2015.

Therefore the catchment under the most pressure have already been prioritised for early collaborative limit-setting processes. All the whaitua processes, including variations and plan changes, will be completed and water quality limit frameworks in place by 2022 (GWRC 2015b).

(c) the current suite of industry, community and council programmes is assessed as insufficient to manage the risk of significant impacts

The proposed Plan option includes a suite of industry, community and council programmes to effectively manage the risk of significant impacts on water quality. In particular, it includes methods to expand current non-regulatory programmes (Method M12) and to develop further good management practice guidance with industry (Method M28). Method M10 will investigate poor water quality and, if required, establish methods to improve water quality. These methods mitigate the risk of significant impacts occurring ahead of each whaitua process.

(d) existing regional plan provisions are not adequate

As set out in section 6.1, the status quo is not an appropriate option for implementing the proposed Objectives O23, O24 and O25. However, the proposed Plan provisions provide an efficient and effective option for addressing the key drivers of water quality pressures ahead of the whaitua process where necessary. For example, the provisions relating to the discharge of stormwater from local authority networks (Rule R50 and Policy P74) take effect immediately to control the current largely unregulated discharge of stormwater. This package of provisions is discussed in section 6.2. These proposed Plan provisions are considered effective at addressing areas of poor water quality including by directing specific, targeted investigations on a case-by-case basis and identifying appropriate improvement methods (Method M10). Fresh and coastal water impacted by faecal contamination require improvement, particularly through the resource consents granted for the discharge of stormwater and wastewater (Policy P63).

(e) the resource is under pressure from existing or anticipated use

As discussed previously in section 2.2, the existing state of water quality in the region's fresh and coastal water bodies is generally stable with some areas of poor water quality. Unlike the extensive conversion of land to more intensive agricultural production over the past decade seen in some other regions around the county, the Wellington Region has experienced comparatively low-level land use change. This low level of land use intensification across the region has further been coupled with low rates of population growth.

There are no apparent or immediate changes expected to reverse the trends of low rates of agricultural land use intensification. While the region is actively examining medium-term options to enhance water use efficiency and potentially expand the irrigable area in the Ruamāhanga catchment through the Wairarapa Water Use Project, these options are being considered in parallel with the Ruamāhanga Whaitua process. Any expansion of the irrigable areas in the Ruamāhanga catchment can only be achieved within the context of the existing water quality policy framework. This includes the requirement to maintain or improve water quality as directed by the NPS-FM and reflected in the proposed Plan Objective O23. The identification of how this will be achieved through setting water quality limits will occur through the Ruamāhanga Whaitua process and the resulting whaitua implementation programme.

Efficiency and effectiveness of interim water quality limits

The assessment of the five criteria from the LAWF (2012) report does not indicate that an interim water quality limits regime is a necessary tool to maintain and improve water quality, respond to significant resource pressure or meet the requirements of national policy instruments.

Limits will be set for water quality in each whaitua over the next seven years, in accordance with WRC's progressive implementation programme. Setting two water quality limits would be administratively inefficient. Further, an interim regime may establish rights and drive land use practice and investments which might be contrary to those driven by each whaitua limit setting process. This is particularly the case as an interim limit would not be tailored to the specific drivers and pressures of each water body and therefore would not be an effective approach.

In the case of water quality limits on agricultural land uses, there are a number of regimes from around the country that provide an option for an interim limits regime for the proposed Plan. These include controls on leaching rates based on land use classification, end of pipe discharge limits or controls on expansion/change of land use. There are efficiencies in adopting existing systems. However, these options have not yet proved to be particularly efficient or effective in practice, including because they are not specific to the issues of specific water bodies.

Any water quality limits frameworks would require a transition arrangement to provide time for resource users to adjust to the new requirements. Significant regulatory change, such as a water quality limits regime, can pose social and

economic costs for individuals, businesses and communities. When transition times to new regimes are short and there is a need to rapidly adapt business processes or individual behaviours to a new norm, costs may be particularly high. Significant behavioural change may be required to achieve compliance with the new framework. Transition periods provide resource users time to modify their behaviours.

The implementation of an interim limit framework prior to the introduction of the whaitua-specific limits framework would result in a very short transition period ahead of a further transition to whaitua-specific limits. Such a transition would be too short to be effective being significantly shorter in comparison to transition regimes used elsewhere in the country.

An interim water quality limit across the Wellington Region would be an inefficient duplication of a process already underway and social and economic transition costs would be not be appropriate in consideration of the state of the water resource and pressures faced.

Risks of acting or not acting

The risks of an interim water quality limit framework where there is insufficient information – including of the social and economic impacts of setting an interim limit – is high and one that is not warranted either by the current resource pressure or by lack of tools to manage water quality in the interim.

Table 12 summarises the efficiency and effectiveness of the introduction of an interim water quality limits framework in the proposed Plan.

Table 12: Efficiency and effectiveness of an interim water quality limits framework

Interim water quality limits framework	Benefits	Costs	Risks and information status
	Provides a clear quantum of contaminant limits (e.g. nutrient loss) or land use constraints. Improves planning clarity and certainty to resource users. Maintains overall water quality at current state for the region. Change in land use practices to improve water quality begins immediately.	Cost to WRC to support administrative processes to develop and implement limits under both regional and whaitua frameworks Transition costs to WRC and resource users from short transition period ahead of whaitua-specific limits Significant economic and social costs for resource users to adopt practices to meet interim limits. Does not clearly respond to improving areas of poor water quality. Does not reflect a catchment management approach.	Information is incomplete, so some specific restrictions of land use practice changes may be unwarranted or unnecessary – moderate. Land users and communities see obligations as too onerous and not appropriate – moderate. Initial nutrient allocation regime incompatible with allocation structures developed through collaborative process – moderate. Duplication of administrative process seen as inefficient – moderate.

Overall efficiency and effectiveness	Overall the use of interim limits would not be an efficient and effective option. The current pressures and state of the resource do not warrant regulating activities that impact water quality ahead of the catchment-specific limit setting under each whaitua process. Any interim limits would duplicate administrative processes and bring with it associated inefficiencies. To be an effective approach, the implementation of limits would require a transition period allowing resource users to adapt to the interim water quality limits regime which would then be readdressed through the whaitua process.

6.3 Summary of appropriateness of proposed Plan provisions

Table A4 in the Appendix summaries the evaluation of the effectiveness and efficiency of the proposed water quality framework against the status quo, and concludes that the proposed Plan approach is the most appropriate to achieve Objectives O23, O24 and O25.

The proposed Plan approach includes policies and rules and introduces new or expanded non-regulatory methods that effectively and efficiently contribute to maintaining or improving water quality in combination with a strengthened discharges to water and land policy framework (see "Section 32 report: Discharges to water" and "Section 32 Report: Discharges to land").

An expanded non-regulatory approach forms the core of the catchment-specific provisions for managing agricultural land use. In particular, Method M12 is aimed at either restoration or a gradual reduction in nutrient and sediment pollution in priority catchments identified as areas for improvement, based on the current pressures and state of the resource.

Point source discharges are directed to improve water quality where contamination is affecting contact recreation and Māori customary use (Policy P63 and Method M27). Water bodies that do not safeguard aquatic ecosystem health and mahinga kai, or provide for contact recreation and Māori customary use, require further investigation to better identify the mix of factors contributing to poorer water quality and so allow for the development of efficient and effective intervention strategies (Method M10).

This integrated package of regulatory and non-regulatory approaches will maintain or improve fresh and coastal water quality efficiently and effectively as:

- It ensures that water quality in the region is maintained without significant increases in costs to the community or resource users
- Council and resource user costs are focused on locations where the state and pressures on the resource indicate that the investment of additional effort will provide an improvement in water quality, in an effective and practical manner
- The combination of regulatory and non-regulatory methods addresses the complex drivers of water quality impacts from urban and rural land use activities in a coherent framework

- The response is appropriate as it responds to regional trends in water quality monitoring and little foreseeable change in the rate of population growth and agricultural land use intensification

This option, in conjunction with the catchment-specific variations and plan changes resulting from the work of the whaitua committees, gives effect to the NPS-FM, NZCPS and RPS. The approach addresses the community expectations that were established during consultation and documented in Parminter (2011) to work towards improvements in water quality. The proposed Plan provisions establish a structure by which regulation and non-regulatory methods manage cumulative impacts on water quality by taking account of the range of expected characters of water bodies from the top of the catchment to the coastal marine area.

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Appendix

Table A1: Summary of appropriateness of proposed Objective O23 – maintain or improve water quality

Objective O23 The quality of water in the region's rivers, lakes, natural wetlands, groundwater and the coastal marine area is maintained or improved.	
Relevance	
Directly related to resource management issue?	Yes, this objective relates to Issues 1.1, 4.1, 4.2 and 6.3 (GWRC 2104a).
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, particularly sections 5(2(a), 5(2)(b) and 5(2)(c), and 7(f).
Relevant to Māori environmental issues? (sections 6(e),6(g),7(a) and8)	Yes, particularly 7(a) and 8.
Relevant to statutory functions or to give effect to another plan or policy (i.e. NPS, RPS)?	Yes, RMA section 30, particularly (1)(c)(ii), 30(1)(f) and 30(1)(g)(ii), NZCPS Objective 1, NPS-FM Objective A2, RMA section 7(f).
Usefulness	
Will effectively guide decision-making?	Yes, this will guide the processing of resource consents to undertake activities that impact on water quality.
Meets sound principles for writing objectives?	This objective is clear and a complete sentence related to an issue. This objective is not time-bound as it aims to be delivered through time.
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. In particular, this objective is an important companion to O15, O17 and O20.
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?	Yes, the achievement of this objective will become clear in the future through specific monitoring of the proposed Plan and state of the environment monitoring
Is it expected that the objective will be achieved within the life of the proposed Plan or is it an aspirational objective that will be achieved sometime in the future?	The objective will be achieved in the life of the proposed Plan.
Does the Council have the functions, powers, and policy tools to ensure that they can be achieved?	Yes, sections 9, 12, 13, 14 and 15 of the RMA are all relevant. This objective will be achieved through the policies, rules and other methods in the proposed Plan.

What other parties can the Council realistically expect to influence to contribute to this outcome?	All resource users, including territorial authorities, government departments, mana whenua, landowners and water users.
What risks have been identified in respect of outcomes?	The risk to water quality and aquatic ecosystem health will be reduced through the achievement of this objective.
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?	As a very broad objective, O23 will affect the region's land and water users. In the short term (i.e. before whaitua processes are complete), the people it affects the most are applicants for consent for point source discharges and land managers moving to good management practices.
Existing objectives	
Are the existing objectives still relevant or useful?	No, the existing objectives are not relevant or useful to the proposed Plan. There are some objectives (see below) which provide some direction on the matter of water quality, but which are not as relevant to the current policy environment and not as useful as O23. Regional Coastal Plan 4.1.4 Land, water and air in the coastal marine area retains its life-supporting capacity. Regional Freshwater Plan 4.1.5 The life-supporting capacity of water and aquatic ecosystems is safeguarded from the adverse effects of any subdivision, use and development.

Table A2: Summary of appropriateness of proposed Objective O24 – providing for contact recreation and Māori customary use

Objective O24 Rivers, lakes, natural wetlands and coastal water are suitable for contact recreation and Māori customary use, including by: (a) maintaining water quality, or (b) improving water quality in: (i) coastal water to meet, as a minimum, the primary contact recreation objectives in Table 4.1 , and (ii) significant contact recreation fresh water bodies to meet, as a minimum, the primary contact recreation objectives in Table 4.2, and (iii) all other rivers, lakes and natural wetlands to meet, as a minimum, the secondary contact recreation objectives in Table 4.3.	
Relevance	
Directly related to resource management issue?	Yes, this objective addresses issues about water quality, land use activities and discharges and the ability of communities to use and access water, particularly Issues 4.3, 5.1, 5.2, 6.3 and 6.6 (GWRC 2104a).
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, particularly sections 5(2), 6(e), 7(a), 7(aa), 7(c), 7(f) and 8.
Relevant to Māori environmental issues? (sections 6(e),6(g),7(a) and 8)	Yes.
Relevant to statutory functions or to give effect to another plan or policy (i.e. NPS, RPS)?	Yes, RMA section 30, particularly sections 30(1)(a) and 30(1)(c)(ii), NPS-FM Objective A1 and A2, NZCPS Objectives 1 and 3, Policies 21 and 23(4), RPS Objective 12 and Policies 5, 12 and 19.
Usefulness	
Will effectively guide decision-making?	Yes, both resource consent application processing and the whaitua committee decision-making.
Meets sound principles for writing objectives?	This objective is clear and complete and specific in the intended outcome. It is not time-bound, though this is appropriate as it will be up to the whaitua committees to establish timeframes for reaching these objectives in accordance with the measures that respond to each catchment's specific problem.
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. The objective is particularly related to Objectives O5 and O23, as well as Objective O9 relating to access to recreational areas in fresh and coastal water.

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?	The objective will be monitored as part specific plan monitoring. Meeting the NOF bottom lines that are given effect to in this policy (for E.coli and planktonic cyanobacteria for secondary contact with water) and these are required by the NPS-FM to be reported to the MfE as part of national monitoring and reporting. The specific measures to meet are set out in tables in the objective.
Is it expected that the objective will be achieved within the life of the proposed Plan or is it an aspirational objective that will be achieved sometime in the future?	The objective can be achieved within the life of the proposed Plan – certainly, some improvement towards the objective can be made and is expected
Does the Council have the functions, powers, and policy tools to ensure that they can be achieved?	Yes, sections 9, 12, 14 and 15 of the RMA are all relevant. This objective will be achieved through the policies, rules and other methods in the proposed Plan.
What other parties can the Council realistically expect to influence to contribute to this outcome?	Territorial authorities, farming groups, mana whenua, recreational use groups and the general public.
What risks have been identified in respect of outcomes?	Potentially high cost of change, particularly for infrastructure change in urban areas; difficulty to accurately establish costs possibly constraining planning process; concern from community and mana whenua that not enough is being done quickly enough.
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.
Who is likely to be most affected by achieving the objective and what are the implications for them?	Poor water quality impacting contact recreation and Māori customary use is the result of many different rural and urban activities and land uses, therefore many other parties are likely to be affected by this objective and the provisions it drives. This includes landowners/farmers who may be presented with the need to fence off waterways to prevent stock access to water and territorial authorities improving the performance of stormwater and wastewater systems to reduce contamination and system overflows during heavy rainfall events. Ratepayers are in turn affected by territorial authority asset management choices.

Existing objectives	
Are the existing objectives still relevant or useful?	No, the existing objectives are not relevant or useful. While there are a number of related objectives in both the RFP and RCP, they are not specific, do not reflect the approach supported by Te Upoko Taiao to elevate the management of Māori values, and do no give effect to the recent amendments to the NPS-FM. Regional Coastal Plan 4.1.7 Public health is not endangered through the effects of previous, present or future activities in the coastal marine area. 10.1.3 The quality of water in the coastal marine area is, as far as practicable, consistent with the values of the tangata whenua. 10.1.5 The risk to human health from contaminated water in the coastal marine area is minimised. Regional Freshwater Plan 4.1.7 The amenity and recreational values of wetlands, lakes, and rivers are maintained and, where appropriate, enhanced. 5.1.1 The quality of fresh water meets the range of uses and values for which it is required while the life-supporting capacity of water and aquatic ecosystems is safeguarded. 5.1.3 The quality of water is, as far as practicable, consistent with the values of the tangata whenua.

Table A3: Summary of appropriateness of proposed Objective O25 – safeguarding aquatic ecosystem health and mahinga kai

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 fresh water body or coastal marine area is improved over time to meet that objective.	
Relevance	
Directly related to resource management issue?	Yes, this objective relates to Issues 1.11, 3.1, 4.1, 4.2, 4.3, 4.4, 6.1 and 6.2 (GWRC 2104a).
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, all of section 5 and 6(e) and 7(d), 7(f), 7(g)
Relevant to Māori environmental issues?	Yes, sections 6(e), 6(g), 7(a) and 8.
Relevant to statutory functions or to give effect to another plan or policy (i.e. NPS, RPS)?	RMA section 30(1)(c) functions and RPS Policy 61 allocation of responsibilities make WRC the authority responsible for developing objectives, policies and methods, including rules in regional plans to control the use of land to maintain and enhance ecosystems in water bodies and coastal water. NPS-FM objectives, particularly A1, A2, B1 and B4, and Policies A1-A3 and B4, NZCPS Objective 1 and Policies 11, 21, 22 and 23, RPS Objectives 6, 12, 27 and Policies 5, 12, 18, 19, 61.
Usefulness	
Will effectively guide decision-making?	This objective will guide the processing of resource consents for activities that contaminate waters in the region, reduce the amount of water in rivers, lakes and wetlands or impact aquatic habitat. This objective will support the process for setting water quality and quantity limits in the proposed Plan as directed by the NPS-FM and the RPS for fresh and coastal water.
Meets sound principles for writing objectives?	The objective is a clear and complete statement that responds to water quality, water quantity, ecosystem and mana whenua issues. The objective is specific and provides detail as to what is to be achieved. Though the objective is not time bound as it aims to deliver benefits over time.
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. In particular, Objectives O5 and O23 are very relevant to this objective.

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?	This objective seeks continuous improvement, so establishes a direction of travel rather than an end point. Measures of aquatic ecosystem health are used in state of the environment monitoring. The outcomes described in Tables 3.4-3.8 of the Objective will be monitored and reported on regularly, and should provide a through time description of how and when this objective is being met throughout the region. Greenfield et al (2015a) benchmarks how fresh and coastal water bodies fare in respect to the outcomes as described in the proposed Plan. This benchmarking exercise can be repeated in future. More generally, the objectives will be measured through monitoring the state of the environment.
Is it expected that the objective will be achieved within the life of the proposed Plan or is it an aspirational objective that will be achieved sometime in the future?	This is an aspirational objective that seeks continuous improvements in ecosystem health during the life of the proposed Plan and beyond. The whaitua committee process will determine timeframes for achieving the whaitua-specific versions of this objective, therefore this objective will be achieved within the lifetime of the proposed Plan by setting water quality limits, minimum flows, water levels and core allocations.
Does WRC have the functions, powers, and policy tools to ensure that they can be achieved?	WRC has powers under has appropriate functions and powers to control water quality, water quantity, aquatic ecosystems and habitat under sections 9 to 15 and section 30 of the RMA to achieve these objectives.
What other parties can WRC realistically expect to influence to contribute to this outcome?	This objective is very broad and integrative in how it would be achieved consequently it affects all resource users, but most particularly: All resource users Territorial authorities Government departments (e.g., DOC) Landowners
What risks have been identified in respect of outcomes?	The risks to aquatic ecosystem health and mahinga kai will be reduced through the achievement of this objective. However, robust integration of water quality, flows and water levels and aquatic habitat for ecosystem health and mahinga kai is difficult to quantify.
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. There is a strong desire from the community and particularly mana whenua that this objective be achieved. The objective seeks reasonable environmental and cultural outcomes and seeks to achieve these over appropriate timeframes.

Who is likely to be most affected by achieving the objective and what are the implications for them?	All resource users will be affected by the achievement of this objective through permitted activity conditions and policies in the proposed Plan placing requirements on their activities to avoid, remedy or mitigate effects on ecosystem health and mahinga kai. It is reasonable to expect that both urban and rural territorial authoirities will be affected by the provisions requiring improvement. Farmers and rural land users in rural areas will be affected by regulatory and non-regulatory moves to improve practices to good management standards and by requirements around. The policies and methods of the proposed Plan, including rules, will help determine how activities should be carried out.
Existing objectives	
Are the existing objectives still relevant or useful?	Various objectives in the RFP take a comparative approach to the proposed objective. In the RFP, Objective 4.1.5 safeguards the life-supporting capacity of water and aquatic ecosystems and Objective 4.1.6 seeks to protect aquatic vegetation and habitat of fresh water bodies. Objective 5.1.1 is to meet uses and values of water while safeguarding the life-supporting capacity of water and aquatic ecosystems. Objective 6.1.1 seeks to ensure that the flows in rivers and water levels in lakes and wetlands are sufficient to maintain the natural and amenity values of water bodies. In the RCP, Objective 4.1.4 is to retain the life-supporting capacity of land, water and air in the coastal marine area and Objective 4.1.14 recognises and provides for the values of tangata whenua. Objective 10.1.3 states that the quality of water in the coastal marine area is, as far as practicable, consistent with the values of the tangata whenua. These objectives remain relevant but are encompassed within objectives in the proposed Plan. The proposed objective better integrates water quality, water quantity and aquatic habitat. The proposed objective also better addresses the requirements of the NPS-FM, in particular the requirement for limits to be addressed in policies and methods of the proposed Plan.

Table A4: Assessing efficiency and effectiveness of policies and methods to maintain and improve water quality

		Option 1 : **Status quo**	**Option 2 :** **Proposed plan (preferred approach)** **Combine regulatory and non-regulatory methods to maintain overall, and to improve in known areas of impacted water quality**
Costs	WRC	Minimal immediate costs to council although failure to address priority areas will lead to more expensive actions being needed in later years. Not meeting statutory obligations under the NPS-FM, NZCPS or RPS.	Additional cost to WRC as it works with landowners to change land use practices and undertake restorative actions. Additional costs to WRC to undertake water quality investigations. WRC will need to add further capacity to current capabilities, therefore increased staff resource and training costs.
	Resource users	The cost of making a resource consent application and of consent compliance requirements, applies only to some activities.	Additional costs associated with changes in on-ground practice overtime, varying depending on farm system and location. Need to increase capacity, capability and skills as new practices are trialled and adapted to individual situations.
	Community costs	Does not meet community expectations for providing improvement in water quality for contact recreation and Māori customary use, and safeguarding mahinga kai and ecosystem health. Little or no direct benefit to economic growth or employment costs. Little improvement in water quality in areas with current degraded water quality. Possible water quality degradation in some areas. Cumulative effects of activities on fresh and coastal water quality is not systematically managed. Poor integration between the planning framework and non-regulatory approaches. Planning framework does not integrate the management of fresh and coastal waters.	Additional cost to ratepayers through providing funding of non-regulatory methods driven by this option. Increased costs to local authorities associated with improvements in wastewater and stormwater network discharges. Improvement is not immediate, therefore some values may continue to be compromised in the short-term.

		Option 1 : Status quo	Option 2 : Proposed plan (preferred approach) Combine regulatory and non-regulatory methods to maintain overall, and to improve in known areas of impacted water quality
Benefits	WRC	No change required to the status quo in the short term.	Gives effect appropriately to national and regional planning instruments including the NZCPS, NPS-FM and RPS. Increased knowledge of resource management issues across the region. Increase in functional operational partnerships between WRC, landowners, iwi, community and stakeholder groups.
	Resource user	No change to current practice is required in the short term.	More certainty for resources users as expectations for water quality outcomes in fresh and coastal waters are clearly defined. Increased utility of water resources. Financial assistance and technical support to improve land management practices, bringing environmental, cultural and operational benefits to landowners and to the wider community. Longer term, benefits to users may arise from more efficient use of inputs and land area and from better understanding of the farm system. Increase in operational partnerships between WRC and landowners and iwi, community and stakeholder groups.

		Option 1 : Status quo	Option 2 : Proposed plan (preferred approach) Combine regulatory and non-regulatory methods to maintain overall, and to improve in known areas of impacted water quality
	Community benefits	Maintain overall water quality at current state for the region.	Community expectations for providing improvement in water quality for contact recreation, Māori customary use, mahinga kai and safeguarding ecosystem health are met. Maintain overall water quality at current state and improve water quality over time of in areas where water quality does not currently meet community expectations. Expected small increase in economic activity and employment associated with increased public spending. Cumulative effects of activities on fresh and coastal water quality is systematically managed. A better integrated planning framework and non-regulatory methods for efficiently managing water quality within catchments. Planning framework integrates the management of fresh and coastal waters.
Efficiency and effectiveness		The status quo does not efficiently or effectively address all statutory obligations, provided by national and regional instruments. The status quo is not efficient or effective in the longer term (10 years) as it fails to drive improvements in the water quality of fresh and coastal waters in locations where the state and/or pressure on the resource justify. Longer term water quality expectations of resource users and the community will not be met. The current planning framework is inefficient and ineffective as it fails to set clear water quality expectations, for resource users, administrators and the community.	The proposed Plan efficiently and effectively addresses all statutory obligations provided by national and regional instruments. It is effective in the longer term (10 years) as it drives improvements in the water quality of fresh and coastal waters in locations where the state and/or pressure on the resource justify. Longer term water quality expectations of resource users and the community will be met. The proposed Plan is efficient and effective as it sets clear water quality expectations, for resource users, administrators and the community. The proposed Plan brings together regulatory and non-regulatory tools to effectively and efficiently manage fresh and coastal water quality outcomes at catchment scales.

	Option 1 : **Status quo**	**Option 2 :** **Proposed plan (preferred approach)** **Combine regulatory and non-regulatory methods to maintain overall, and to improve in known areas of impacted water quality**
Risk of acting or not acting	Risk of failure to meet statutory obligations – moderate. Risk to future resources users from not addressing identified water quality issues – moderate risk. Risk of failure to meet fully the NPS-FM to improve water quality where community expects – high risk. Risk of failure to improve sites below the NOF bottom line – high risk. Uncertainty of community expectations around water quality improvements – potential for misaligned investments or actions.	Information is incomplete, so some specific land use practice changes may be unwarranted or unnecessary – moderate risk. These risks are mitigated by the publicly funded support for change and by direction for progressive improvement. Resource users see obligations as too onerous and support as being in sufficient and do not participate – low risk.
Appropriateness	The status quo option is not appropriate because it offers a limited, un-integrated planning framework that is ineffective and inefficient in meeting the full expectations of statute, the community and resource users for managing fresh and coastal water quality for contact recreation and Māori customary use, and safeguarding mahinga kai and ecosystem health.	The proposed Plan option is appropriate because it offers a clear integrated planning framework that is effective and efficient in meeting the expectations of statute, the community and resource users for managing fresh and coastal water quality for contact recreation, and Māori customary use, safeguarding mahinga kai and ecosystem health.
Conclusion	The most efficient and effective option is Option 2, Proposed Plan.	

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

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