



**MARLBOROUGH
DISTRICT COUNCIL**

Catchment Care Programme

Background, Drivers and Objectives for Catchment Management in Marlborough

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Catchment Care Programme

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Report Prepared by:

J Addenbrooke

Addenbrooke Advisory Ltd

M Oliver

Environmental Scientist – Land Management, Marlborough District Council

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Jude Addenbrooke

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Addenbrooke Advisory Ltd

ENVIRONMENTAL MANAGEMENT

PO Box 24030

Abels

HAMILTON 3253

m. 027 488 1987

e. environment@addenbrooke.nz

w. addenbrooke.nz/environment



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Executive Summary

Marlborough District Council has responsibility for the management of both land and water (amongst other resources). It has the ability to integrate land and water considerations in its planning, and to influence their management through a range of non-regulatory instruments. The Catchment Care programme focuses primarily on the non-regulatory tools that Council has to support the landowners and communities of Marlborough in using their natural resources wisely.

Through the Catchment Care programme, Council seeks to take a catchment-based, integrated approach working with stakeholders and the community to meet the obligations set in the proposed Marlborough Environment Plan.

Through the Catchment Care programme, Council seeks to take a catchment-based, integrated approach working with stakeholders and the community to meet the water quality obligations set in the proposed Marlborough Environment Plan (pMEP). Under the pMEP, Council is obliged to address water quality issues in catchments where water quality has been identified as degraded or at risk of degradation. The Catchment Care programme is driven by the regulatory requirements of the pMEP but is focused primarily on the non-regulatory opportunities the Council has to support and invest in the people and communities of Marlborough to facilitate the wise use of natural resources. This work will take a collaborative approach to deliver outcomes decided by communities that enhance both land and water resources in Marlborough.

This document serves to provide an overview of the Catchment Care programme including the national and regional regulatory environment. The rationale for establishing the programme as well as the key objectives are detailed.

The key objectives of Catchment Care are to:

- *protect or improve water quality in the Marlborough region*
- *reduce erosion and sediment production*
- *protect sensitive receiving environments*

A brief overview is given of the various tools proposed to use in implementation of the Catchment Care programme although more detailed explanation of these will be included in 3 forthcoming operational guides. Each of these are proposed to detail a differing aspect of the Catchment Care programme and provide underpinning guidance to help Council develop capability in catchment management. These are the:

- Community Engagement and Catchment Enhancement Plans guide
- Implementation Methodology Toolbox guide
- Funding Assistance Toolbox guide

Purpose

This document seeks to provide a high-level overview of Marlborough District Council's proposed programme for sustainable land and water management, "Catchment Care", and to explain what level of service is expected and why, including:

- Context for delivery of this function by the Marlborough District Council.
- How the programme aligns with the broader strategic goals of Marlborough District Council's proposed Marlborough Environment Plan and other relevant legislative drivers.
- Objectives of the programme, and prioritising how it will be delivered.
- Expected programme areas to be developed
- How Catchment Care will align with other Marlborough District Council's programmes such as State of Environment monitoring

This document will provide information around monitoring requirements, data management and reporting.

Scope

To document the Catchment Care programme and to outline how the programme will implement the aims of the proposed Marlborough Environment Plan. Identification of knowledge gaps and the methodology to fill these is also within scope for this document.

This document is divided into three parts:

- Part One provides the background to the development of the Catchment Care programme
- Part Two outlines the existing legislative and regulatory elements underpinning Catchment Care
- Part Three will then discuss the various operational elements both developed and yet to be developed including:
 - Key Objectives
 - Drivers of change including relevant national and regional legislation and policy
 - Elements of the programme already in place:
 - Water Resource Units
 - Catchment Characterisations
 - Operational guides to be further developed:
 - Community Engagement and Catchment Enhancement Plans Implementation Methodology toolbox
 - Funding Assistance Toolbox
 - Future directives.

PART ONE- Background

Marlborough Region Overview

The Marlborough region covers 12,484 km² of the north-eastern part of the South Island (Figure 1). It is divided into two distinct geographical areas by the Wairau River. To the north is the drowned mountain valley system of the Marlborough Sounds, characterised by extensive coastline, the rugged topography of the Richmond and Bryant Ranges, short steep rivers and streams, wet climate and predominantly native forest cover. To the south of the Wairau River are located the productive Wairau and Awatere plains and the mainly dry tussock-covered mountain ranges of the Inland Kaikoura and Raglan Ranges, with the highest peaks in the region (Mt Tapuaenuku at 2885m).

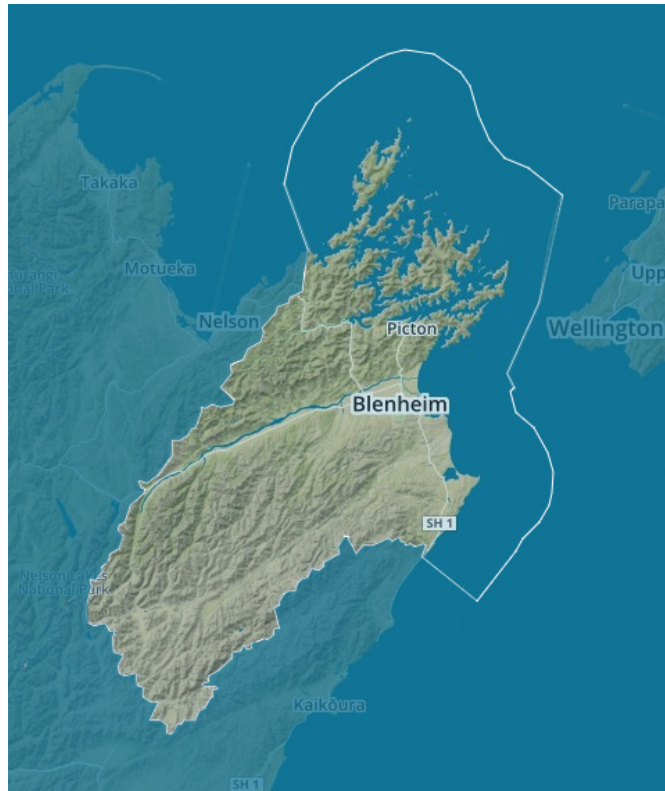


Figure 1: Marlborough region (Source LAWA)

The region includes three major catchments, those of the Wairau and Awatere Rivers and the Te Hoire - Rai/Pelorus River. Marlborough's population is evenly divided between rural and urban dwellers. Blenheim, the major town (population 31,600)¹, is situated on the Wairau plain. The next largest town is Picton (pop. 4,350) is located at the southern end of Tootaranui / Queen Charlotte Sound. The region is predominantly rural with agriculture, forestry and viticulture being the main economic activities. Extensive sheep and beef farming is located on hill country surrounding viticulture on the plains. Forestry occupies a large amount of steep land particularly to the north of the Wairau River and in the Marlborough Sounds. The river valley plains north of the Wairau river (Rai, Pelorus, Kaituna, Tuamarina rivers and the Linkwater area) are used chiefly for dairy farming.

¹ Statistics NZ 2018 Census data

Land and Water Resources

The proposed Marlborough Environment Plan (pMEP) explains how natural resources, including land and freshwater, are critical to the wellbeing of everyone and everything in the region. The Plan recognises that our “*quality of life and wellbeing are dependent on how we use, develop and protect our natural and physical resources*”.² The pMEP also notes that land and water are not only fundamental to the prosperity of the region’s businesses and communities, but they support social, cultural, ecological and recreational values. It is essential to maintain these resources in a healthy state for the long term.

Land-use in the region can impact on freshwater environments, particularly through increased loadings of nutrients, sediment and pathogens in the water³. In Marlborough, these impacts are seen in water bodies where surrounding landuse includes forestry and livestock farming as important industries. Viticulture is considered a low risk to water quality, but it has impacts upon soil and air quality as well as waste disposal.

Marlborough District Council

The Marlborough region is administered by the Marlborough District Council (MDC), a unitary authority which combines the functions of both a District Council and Regional Council. As such, it has responsibility for the management of both land and water (amongst other resources), and also the ability to integrate land and water considerations in its planning. The legislative context of Council's responsibilities is outlined in a later section. As well as functioning as a regulator of natural resources, the Council has the ability to influence management of land and water through a range of non-regulatory instruments.

Prior to the advent of the Marlborough District Council, soil conservation activities in Marlborough were carried out by the Marlborough Catchment Board and later by the Nelson Marlborough Regional Council. The Nelson Marlborough Regional Council was disbanded at the request of the Nelson City, Tasman District and Marlborough District Councils in 1993. All three councils became unitary authorities and took over the responsibilities of the regional council. Since this time, the focus at Marlborough District Council has been predominantly on monitoring water quality and quantity. Land management activities have been restricted to soil quality monitoring, soil science and some small-scale land management work.

A review of the operative resource management framework and increasing public interest in water quality and the effects of intensive farming have prompted Council to increase its capacity to assist landowners with land management and soil conservation to deliver on a sustainable freshwater and coastal environment outcomes.

The Catchment Care Programme

Through the Catchment Care programme, Council seeks to take a catchment-based, integrated approach working with stakeholders and the community to meet the water quality obligations set in the proposed Marlborough Environment Plan. Under the pMEP, Council is obliged to address water quality issues in catchments where water quality has been identified as degraded or at risk of degradation. The Catchment Care programme is driven by the regulatory requirements of the pMEP but is focused primarily on the non-regulatory opportunities the Council has to support and invest in the people and communities of Marlborough to facilitate the wise use of natural resources.

² Proposed Marlborough Environment Plan

³ Ministry for the Environment and Ministry for Primary Industries. 2018. *Essential Freshwater: Healthy Water, Fairly Allocated*. Wellington: Ministry for the Environment and Ministry for Primary Industries.

Council holds a broad overview of environmental issues affecting water quality from the long-term monitoring work it undertakes. This work includes monitoring of fresh- and salt- water quality, estuarine habitat, biodiversity, soil quality and erosion. The creation of the Catchment Care programme will expand this current role of Council to include provision of advice to landowners, facilitation of catchment enhancement groups, implementation of remediation work, sourcing of funding for such work and monitoring of the effects of remediation work.

This work will take a collaborative approach to working with landowners and other stakeholders to deliver outcomes decided by communities that enhance both land and water resources in Marlborough. The programme is expected to incorporate local catchment values within the wider pMEP water quality guidance that has already been set by public consultation.

The key objectives of Catchment Care are to:

- *protect or improve water quality in the Marlborough region*
- *reduce erosion and sediment production*
- *protect sensitive receiving environments*

PART TWO- Legislation and Policy underpinning the Catchment Care programme

National Legislative Context

Marlborough District Council has responsibilities for land and water management under various statutes, the most important of which are outlined below. Responsibilities include both regulatory and non-regulatory aspects, and provide an over-arching context for the Catchment Care programme.

Resource Management Act 1991 (RMA)

The purpose of the RMA is to promote the sustainable management of natural and physical resources. As an authority operating under the Act, Council has an obligation to provide for the sustainable management of natural and physical resources in the region. The Act provides for an integrated framework to manage land, air, water and soil resources, biodiversity, the coastal marine environment, subdivision and the control of pollution, contaminants and hazardous substances.

To achieve the purpose of the RMA, the Council is required to prepare a range of documents, some of which are mandatory, while others are optional. A regional policy statement, regional coastal plan and district plan are mandatory documents. The Council has recently opted to combine its regional policy statement with the coastal and district plans into a single proposed Marlborough Environment Plan (pMEP)⁴, to provide a simplified and more streamlined resource management framework for all users.

Section 30 of the Act states that “every regional council shall have functions” that allow “the control of land for the purpose of soil conservation” as well as “maintenance and enhancement of” water quality. This includes planting for soil conservation and water quality purposes (Sec. 30.1(c & g)).

Section 32 of the Act requires the Council to have regard to objectives that are most appropriate to achieve the purposes of the RMA. Policies and methods are the most appropriate way of achieving these objectives. The latter includes considering reasonably practicable options and assessing the effectiveness of both regulatory and non-regulatory methods. These methods may include the provision of information, services, or incentives, and the levying of charges (including rates). These opportunities will be discussed in Part Three on additional elements to be developed for Catchment Care.

The RMA and pMEP sets up a special relationship between iwi, the Crown and local authorities. The relationship is initially identified through the purpose and principles of the RMA, whereby those seeking to achieve the purpose of the RMA must recognise and provide for as a matter of national importance:

- the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga;
- the protection of recognised customary activities; and
- the protection of historic heritage from inappropriate subdivision, use and development.

The RMA further requires that particular regard is had to kaitiakitanga (guardianship) and that the purpose and principles of the Te Tiriti o Waitangi are taken into account in sustainably managing Marlborough’s natural and physical resources.

Iwi interests must be taken into account when developing any regional policy statement, regional plan or district plan. A statutory acknowledgment is legal recognition of the particular cultural, spiritual, historical and traditional association of an iwi with an identified statutory area. Council holds records of statutory

⁴ Proposed Marlborough Environment Plan

acknowledgements from the 8 Te Tau Ihu Iwi. Details can be found on the Councils website⁵. Iwi management plans are generally prepared as an expression of rangatiratanga to help iwi and hapū exercise their kaitiaki roles and responsibilities. These plans are a written statement identifying important issues regarding the use of natural and physical resources in the rohe of an iwi and often cover more than RMA matters. Not all of Marlborough's tangata whenua iwi had prepared iwi management plans at the time the pMEP was prepared, but any future ones will need to be considered in future resource consent applications and plan changes.

Local Government Act 2002 (LGA)

This Act is based on a sustainable, effective, responsible, responsive and accountable local government being fundamental to achieving the long-term wellbeing of communities. The Act outlines the responsibilities of local government and the decision-making process for activities undertaken on behalf of the community, primarily through the adoption of a Long Term Plan

Under this Act, Council has a duty to consult and engage with the community to establish community outcomes.

Although the terms engagement and consultation are often used interchangeably, there is a difference between the Council's consultation and engagement activities. Consultation refers to the process of asking the community, or stakeholders, for their views on a particular proposal or issue. Engagement is about working with the community to identify their needs and issues and involving them in the decision-making process.⁶ This has implications for Catchment Care, particularly with regard to community and stakeholder engagement and the Catchment Enhancement Plans.

Soil Conservation and Rivers Control Act 1941

This Act allowed for the establishment of catchment districts and Catchment Boards, with the primary aim being to minimise and prevent damage within the district by floods or erosion. The Boards were given the authority to do works that:

- control the flow of water towards, within and from watercourses;
- prevent the overflow of banks and reduce damage caused by such events; and
- reduce erosion by undertaking soil conservation activities.

The functions provided for under this Act have been transferred from Boards to regional councils and the updated Objects of the Act (Section 10) are:

- a. the promotion of soil conservation
- b. the prevention and mitigation of soil erosion
- c. the prevention of damage by floods
- d. the utilisation on lands in such a manner as will tend towards the attainment of the said objects.

The Objects a, b and d in particular, have relevance for the Catchment Care programme.

There are a number of other statutes that may have a bearing on the Catchment Care programme or components of it, such as Catchment Enhancement Plans. These include:

- Land Drainage Act 1908

⁵ <https://www.marlborough.govt.nz/your-council/tangata-whenua/te-tau-ihu-iwi-statutory-acknowledgements>

⁶ River & Catchment Services Group and GHD Limited, *Overview of River & Catchment Services - Waikato Region*. 2011. Waikato Regional Council, Policy Series 2011/03

- Civil Defence and Emergency Management Act 2002
- Biosecurity Act 1993
- Conservation Act 1987
- Reserves Act 1997
- Wildlife Act 1953
- Freshwater Fisheries Regulations 1983.

National Policy Direction

Central Government, through the Ministry for the Environment (MfE), has a programme of National Direction work that seeks to provide overall direction and consistency around management of natural resources. This involves either development, or review, of National Environment Standards, National Policy Statements, and national regulation.

A change in National direction is also expected in the near future. A revision of the NPS-FM is underway as part of the Governments Essential Freshwater programme. Results of this work may dictate that Council acts to improve water quality in certain catchments and negating local prioritisation.

National Policy Statement for Freshwater Management 2014 (amended 2017) (NPS-FM)

The NPS-FM has the primary objective of improving freshwater management by regional councils⁷, noting that the management of freshwater through a framework that considers and recognises Te Mana o te Wai as a matter of significance. It sets out the objectives and policies for freshwater management under the RMA. It requires councils to set objectives for water resources and subsequently to set water quantity and quality limits to achieve those objectives. It also sets as an objective that the overall state of water quality within any region must be maintained or improved⁸.

It also provides a National Objectives Framework (NOF) to assist regional councils and communities to more consistently and transparently plan for freshwater objectives. It is based on the identification of waterbody values and the setting of objectives to protect those values. The NOF contains two compulsory national values: ecosystem health and human health for recreation. Attributes, or measurable physical, chemical and biological characteristics are identified with respect to these values.

Objective C of the NPS-FM, “To improve integrated management of fresh water and the use and development of land in whole catchments...” is directly relevant to Catchment Care. Regional councils are required to implement the NPS-FM as promptly as is reasonable, with full completion by 2025 (with extension possible under certain conditions).

At the time of writing, MfE had signalled that a revision of the NPS-FM is currently underway. It is councils understanding that this regulation will be strengthened and additional objectives and attributes will be added.

National Environmental Standards for Plantation Forestry 2017 (NES-PF)

The NES-PF mark a significant change in the way forestry activities are managed under the RMA, moving away from regional and local planning and the associated variation in regulation to a nationally consistent set of regulations. The objectives of the new Standards are to:

- maintain or improve the environmental outcomes associated with plantation forestry activities nationally; and
- increase certainty and efficiency in the management of plantation forestry activities.

⁷ *Land and Water Forum advice on improving water quality: preventing degradation and addressing sediment and nitrogen - May 2018.* <http://www.landandwater.org.nz/>

⁸ National Policy Statement for Freshwater Management 2017, Objective A2

The NES-PF permits core forestry activities⁹ provided there are no significant adverse environmental effects. Where the risks of harm to the environment are too high, or if a forest operator can't meet the regulatory requirements for a permitted activity, the operator will need to apply for resource consent.

Three tools are available to Council and foresters to help determine when consents will be needed:

- Erosion Susceptibility Classification
- Wilding Tree Risk Calculation
- Fish Spawning Indicator.

The regulations also recognise that different rules may be needed to manage some specific local circumstances and give effect to other RMA national direction tools such as the National Policy Statement for Freshwater Management and the New Zealand Coastal Policy Statement. Councils will be able to impose stricter rules in unique and sensitive environments, including those with special significance to the community¹⁰. Currently, Council has aligned the operative and proposed resource management frameworks to the NES-PF. Greater stringency has been exercised over the coastal environment of Marlborough Sounds area due to the potential for erosion associated with the effects of plantation forestry harvesting on sensitive marine receiving environments

Conservation General Policy

The General Policy is the highest level of statutory policy for conservation management. The General policy was prepared under section 17C of the Conservation Act to provide unified policy for the implementation of a number of related acts. It provides guidance for the Department of Conservation (DOC) in administration and management of public conservation lands, waters, natural and historic resources. The policy states the "Department needs to work cooperatively with other landowners and occupiers and the wider community, including local government, to protect and advocate for natural resources, historical and cultural heritage, and public access." The implication for Catchment Care is that the DOC should be considered both a partner and stakeholder in catchment enhancement planning.

Regional Regulatory Context

Proposed Marlborough Environment Plan (pMEP)

The Council has opted to combine its regional policy statement and various plans into a single Marlborough Environment Plan, to provide an integrated and comprehensive management framework for the natural and physical resources of Marlborough. The proposed Plan was notified in 2016, with Hearings completed in April 2019.

At the time of writing, the proposed Marlborough Environment Plan was still subject to hearings and deliberations. As such, public submissions and the decisions of the MEP hearings Panel will influence the final nature of the provisions of the Plan i.e. they are subject to change. Decisions from the MEP Hearings Panel are due to be publicly notified later in 2019 at which time all rules will have effect. The provisions will only become operative once they are beyond challenge. Some rules of the pMEP had effect upon plan notification as set out in section 86B of the RMA. Amongst others, these include rules that:

- protect or relate to water, air or soil (for soil conservation); or
- protect areas of significant indigenous vegetation; or
- protect areas of significant habitats of indigenous fauna

Overall, the pMEP framework:

⁹ The NES-PF covers eight core plantation forestry activities: afforestation; pruning and thinning to waste; earthworks; river crossings; forest quarrying; harvesting, mechanical land preparation; and replanting.

¹⁰ National Environmental Standards for Plantation Forestry: Overview of the regulations. 2017. Ministry for the Environment and Ministry for Primary Industries, INFO 804

- describes how we, as a community, want the natural and physical assets of Marlborough to be managed;
- provides a coherent view of the outcomes sought on how our coasts, freshwater resources, rural areas, towns, natural habitats, etc and their interrelationships should be managed;
- influences the actions of resource users, the Council and community.

pMEP policies related to water

The pMEP contains a number of policies that relate to the enhancement of water quality in specific water bodies. These have guided the direction of the Catchment Care programme. These policies require that Council acts to enhance specific water quality issues in these water bodies within a given timeframe. While the specific water quality attributes of concern differ, the pMEP states that a catchment-specific plan for enhancing water quality will be developed for each water body. The methods used to enhance the water quality will be determined following a land use assessment relevant to the specific identified attribute or to the degraded water quality generally. Under the Catchment Care programme, water bodies will be prioritised depending on the degree of degradation, mitigation required and availability of funding. The relevant policies are:

- Policy 15.1.4 – Take action to enhance water quality in the following rivers...
 - (a) Mill Creek
 - (b) Murphys Creek
- Policy 15.1.5 – Take action to enhance water quality in the following rivers...
 - (a) Are Are Creek
 - (b) Cullens Creek
 - (c) Doctors Creek
 - (d) Kaituna River
- Policy 15.1.6 – Take action to enhance water quality in the following rivers...
 - (a) Taylor River
 - (b) Rai River
 - (c) Waihopai River
- Policy 15.1.7 – Take action to enhance water quality in the rivers identified in Table 15.1 as being degraded and in Table 15.2 as being at risk of degradation.

Table 15.1 – Water bodies with degraded water quality	
Are Are Creek	Omaka River
Doctors Creek	Opaoa River
Duncan (Linkwater) Stream	Ronga River
Flaxbourne River	Taylor River
Mill Creek	Tuamarina River
Murphys Creek	Wairau Diversion

Table 15.2 – Water bodies at risk of degradation	
Cullens Creek	Mill Stream
Kaituna River	Opouri River
Kenepuru River	Rai River
Lower Pelorus River	Spring Creek
Lower Wairau River	Waitohi River

pMEP policies related to land

The pMEP contains two policies that direct Council to maintain and enhance the quality of Marlborough's soil resource. These policies seek to:

- Improve our understanding of the effect of land use on soil quality (Policy 15.4.1)
- Encourage land management practices that (Policy 15.4.2):
 - (a) maintain soil structure by:
 - (i) avoiding or remedying soil compaction;
 - (ii) avoiding the loss of soil organic matter; and
 - (iii) avoiding or remedying the effects of increased sodium levels;
 - (b) maintain nutrients at appropriate levels; and
 - (c) retain topsoil in situ.

Methods to implement policy

The pMEP contains several methods that Council will implement to use in order to fulfil the objectives of the Plan. The first four methods describe the initial planning and water quality monitoring required to identify catchments that require further action. These are:

- identification of uses and values (15.M.1),
- water quality classifications (15.M.2),
- investigations (15.M.3)
- monitoring plan (15.M.4).

Once a catchment has been identified as needing further action, the key method is 15.M.5 Catchment Enhancement Plans (CEP). It states:

Catchment Enhancement Plans will be developed as a priority for rivers that have degraded water quality, as identified in Policies 15.1.4 to 15.1.7. The methods to be used to enhance water quality will be determined following an assessment of the cause and effect of degraded water quality and will be clearly identified within the Plans. It may take time to establish the nature of the cause, which may delay the completion of the Plans. Other methods may be used in the interim to reduce the effects of non-point source discharges on water quality. Each Catchment Enhancement Plan will be developed in consultation with resource users in the catchment and other affected parties.

Councils vision for Catchment Enhancement Plans is that they will be the result of collaborative interaction with the communities that both live within the catchment and downstream. These CEP should identify the contaminants of concern, provide mitigation solutions for landowners and aid implementation of these solutions.

During the development of such CEPs, Council has several additional methods it can employ. Two of particular interest are:

- Method 15.M.11 - Liaison (NGO & wider community).

Indicates where Council is to liaise with iwi, Nelson Marlborough Fish and Game Council, Department of Conservation, water users and the community to determine the uses and values supported by rivers, lakes, wetlands, aquifers and coastal waters.

- Method 15.M.14 - Codes of practice and industry guidelines.

States Council is to advocate to industry groups that they, locally or nationally, prepare and/or adopt codes of practice or other guidelines (where not already in place) aimed at reducing the effects of discharges to water.

Any of the above methods and a number of additional methods described in Appendix 1 can be selected for inclusion in a Catchment Enhancement Plan according to the particular features and issues of each catchment.

PART THREE- Operational elements of Catchment Care

Key Objectives of Catchment Care

Through the Catchment Care programme, Council seeks to take a catchment-based, integrated approach to meet the desired land and water quality outcomes set in the proposed Marlborough Environment Plan. This work will take a collaborative approach to working with landowners and other stakeholders to deliver outcomes decided by communities that enhance land and water resources in Marlborough.

The key objectives of Catchment Care in full are to:

- *protect or improve water quality in the Marlborough region in order to protect Te Mana o te Wai*¹¹
 - This objective seeks to minimise losses of nutrients, bacteria or sediment from the land which can lead to a deterioration in water quality and affect sensitive receiving environments
- *reduce erosion and sediment production*
 - Erosion of soils reduces the productive capability of land and produces sediment. This sediment can accumulate downstream from its source and adversely affect sensitive receiving environments
- *protect sensitive receiving environments*
 - These environments may include both natural and built areas. Natural receiving environments might include wetlands, forest, streams, rivers, lakes, estuaries and the coastal marine environment. Damage to these areas can affect biodiversity, ecosystem services and amenity values. Built environments include towns, roads, bridges, homes and farms. Damage to these typically results in financial and social costs to communities.

To facilitate these objectives the programme will:

- recognise that land use can adversely affect water resources. This will be achieved by using existing and future science and monitoring to determine the impact of land use on water quality
- promote sustainable and resilient landuse by using a Ki Uta Ki Tai (from the mountains to the sea) holistic approach. Sustainable and resilient landuses are capable of meeting the reasonably foreseeable needs of future generations, while providing for current generations and adapting to environmental change
- be collaborative with stakeholders by involving stakeholders in planning and decision making, working alongside landowners for remedial works and advocating for funding.

Part Three gives an overview of each of these elements, to assist community and Council understanding of the Catchment Care programme. Council intends to provide more detailed information on the proposed operational aspects of Catchment Care in future reports to facilitate

¹¹ The integrated and holistic well-being of a freshwater body. Upholding Te Mana o te Wai acknowledges and protects the mauri of the water. This requires that in using water you must also provide for Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people). NPS for Freshwater Management pp .7

Council and landowner decision-making. These include reports on Community Engagement and Catchment Enhancement Plans, Programme Implementation Methodology and Funding Assistance.

Figure Two provides a visual representation of these elements, and their hierarchical connections. The Catchment Care programme will follow a Plan-Do-Monitor-Review framework. National direction is set by the Resource Management Act, NPS for Freshwater Management and other legislation. This directs the proposed Marlborough Environment Plan (Red arrows) which in turn directs water quality monitoring. Water bodies identified as having degraded water quality (or are at risk of degradation) then enter the Catchment Care system (Green arrows). Collaborative catchment enhancement planning leads to mitigation, monitoring and reporting feedback loops.

The detailed technical objectives of Catchment Care are:

- To meet the 10-year water quality objectives of the proposed Marlborough Environment Plan (Objectives 15.1 a-e) by:
 - Taking action to improve water quality in rivers that have degraded water quality as identified in Policies 15.1.4 to 15.1.7
 - Developing catchment enhancement plans for enhancing water quality in degraded rivers (Method 15.M.5) including:
 - establishing collaborative and inclusive catchment management groups to advocate and inform landowners how to improve water quality and protect sensitive receiving environments
 - identifying and prioritising the most critical areas within a catchment for action and enhancement
 - developing and commencing implementation work programmes
- To maintain and enhance soil quality within Marlborough (Objective 15.4) by:
 - Implementing Policies 15.4.1 to 15.4.4 to help understand and minimise soil degradation or loss
 - Establishing collaborative liaison with rural industry groups (Method 15.M.39) to advocate to and inform landowners how to improve soil quality and reduce erosion (Methods 15.M.40 & 15.M.41) by:
 - identifying and prioritising the most critical areas for action
 - developing and implementing soil conservation work programmes
- To establish baseline data of the current state of degraded catchments and sensitive receiving environments to enable future monitoring of enhancement work and to report on improvements in water quality within the timeframes set in the pMEP.
- To collaborate with landowners to implement catchment enhancement or soil conservation work
 - To collaborate with landowners to access appropriate funding and assistance for catchment enhancement or soil conservation works

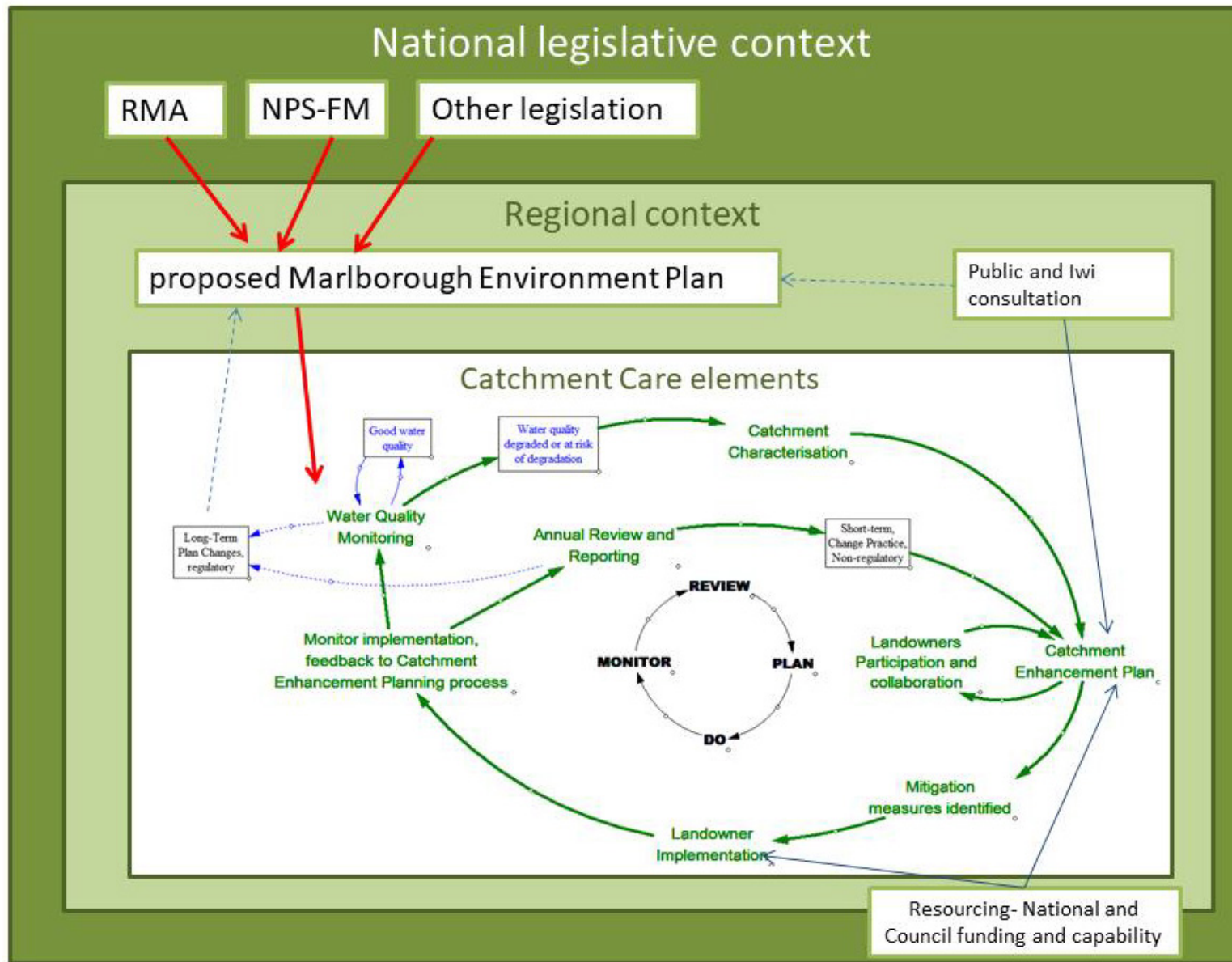


Figure 2: Elements of the Catchment Care Programme. Refer to text for explanatory detail.

Elements already in place for Catchment Care

Freshwater Management Units and Water Resource Units

The National Policy Statement for Freshwater Management requires all regional councils to identify Freshwater Management Units (FMUs) at an appropriate scale for setting freshwater objectives and limits and for freshwater accounting and management purposes. The NPS-FM sets FMUs as the basis for objective and limit setting, value identification, descriptions of current and anticipated future states on the basis of resource use, and accountability with regard to contaminant loads and sources. Council has proposed FMUs under the pMEP process but will not commence the limit-setting process until the pMEP proposals are confirmed.

In order to more clearly define catchments that could be subject to Catchment Enhancement Plans, the Environmental Science Section of Council has divided the region into 60 Water Resource Units (WRUs) (Figure 3). Water Resource units are designed to provide logical and manageably sized areas. “WRU’s are the fundamental geographic units for the management of water quality, quantity and ecological resources. Different water bodies have different environmental values, resource uses and capacities to yield flow and take up contaminants. Many of these factors are controlled by influences such as geology, climate and relief.”¹²

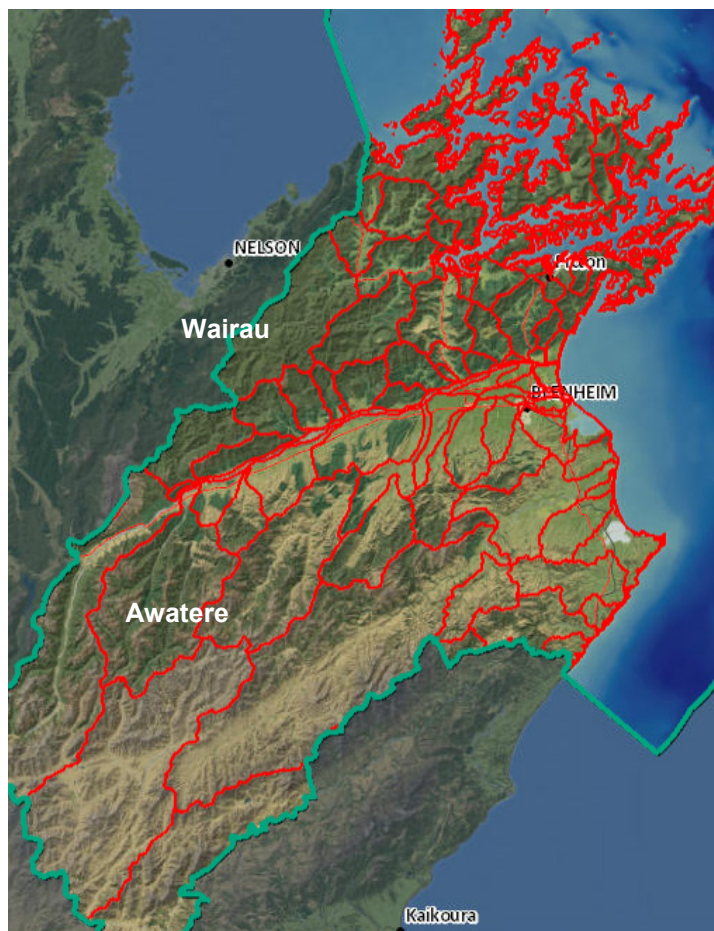


Figure 3: Water Resource Units

¹² P. Hamill. 2012. *Water Resource Units Inventory 2011*. Marlborough District Council unpublished Technical document.

Water quality monitoring

Council is required under the RMA and NPS-FM to monitor natural resources including freshwater to manage environmental impacts. The Ministry for the Environment and Stats NZ together produce national environmental reporting on a number of resource domains, including New Zealand's freshwater and land resource. Council's monitoring programme was adjusted to fit the WRUs and inform the region's State of Environment monitoring programme to enable reporting under the NPS-FM. For each WRU, various values have been identified, and water quality classifications assigned under the pMEP¹³. These are described in Appendix 5 of the pMEP.

As part of the region's State of the Environment (SoE) monitoring, the Council monitors surface water quality on 54 of the 60 WRUs, covering a broad range of catchment types and developments, from pristine native bush catchments to urbanised catchments. Monitoring consists of monthly sampling of physical/chemical parameters at 34 sites and annual monitoring of macroinvertebrates at 51 sites. The monitoring is usually carried out as close to the bottom of each catchment as possible to allow the assessment of the cumulative effects that uses of water and land resources have in a catchment or Water Resource Unit¹⁴.

The Canadian Water Quality Index has been adopted for the analysis of water quality measurements and the Macroinvertebrate Community Index (MCI) is used for the analysis of macroinvertebrate data¹⁵. Using the Canadian Water Quality Index Water to measure quality degradation allows a wider range of attribute values to be measured than those provided by the National Objectives Framework in the NPSFM. The Council's water quality index produces an aggregate score that enables the overall state of water quality to be categorised as excellent, good, fair, marginal and poor, relative to the natural or desirable level (Figure 4). The rivers determined to be degraded (poor or marginal in the index) or at risk of degradation (close to marginal in the index) on the basis of the Council's 2014/15 State of the Environment Report are those identified in Tables 15.1 and 15.2¹⁶ (refer to Part Two)

¹³ Appendix 5 of Volume 3 Proposed Marlborough Environment Plan

¹⁴ S. Henkel. 2013. *State of the Environment Surface Water Quality Monitoring Report 2013*. Marlborough District Council Technical Report No: 13-011.

¹⁵ *ibid*

¹⁶ Proposed Marlborough Environment Plan, Issue 15B

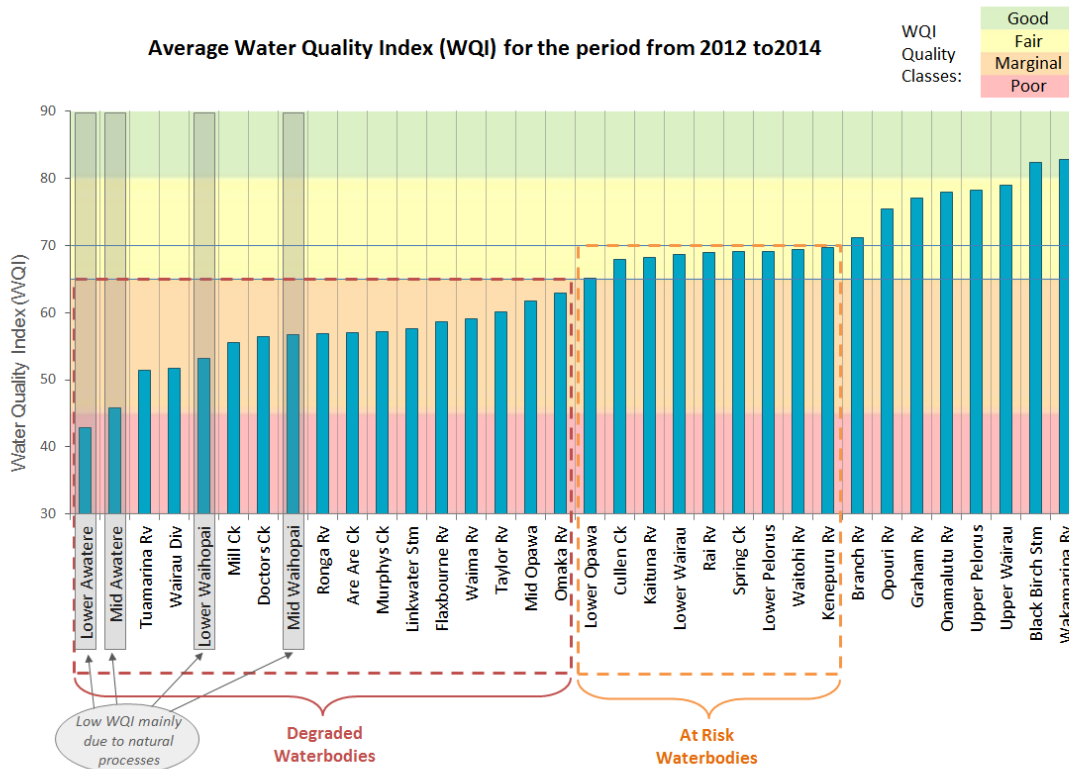


Figure 4 Average Water Quality Index for period from 2012 to 2014

The proposed Marlborough Environment Plan notes that the Council's State of the Environment monitoring programme “has established that water quality has become degraded in some rivers, relative to the natural and human use values that these rivers support or have supported in the past. Of particular note are changes in nutrient (nitrate and phosphorus), sediment and bacteria levels. Increasing levels of these contaminants is indicative of the impact of point source and non-point source discharge to rivers. These discharges have reduced the ability of some rivers to safely support primary contact recreation (i.e. swimming) and aquatic ecosystems. This is a significant concern given the contribution that water-based recreation makes to community wellbeing and the intrinsic values of aquatic ecosystems.”¹⁷

Catchment Characterisations

Catchment Characterisations are detailed studies that look at geology and groundwater, hydrology, soils, land cover and various aspects of water quality, including identification of reasons for the water quality results. Catchment Characterisations are used to identify the key features of, and threats to, a WRU. They commenced under the Regional Policy Statement instruction to improve water quality. Since the notification of the pMEP, they are required as an initial step to investigate causes of water quality issues in a specific catchment following identification of those problems during SoE monitoring. Catchment Characterisations also enable the identification of key mitigations or actions that could be undertaken to improve the specific water quality attributes of concern when designing a Catchment Enhancement Plan.

A Catchment Characterisation has been completed for Doctors Creek, based on State of the Environment sampling that identified it as one of the worst sites in regard to water quality (ranking in the bottom five of the 34 sites monitored). It is also one of the identified pMEP degraded waterbodies. Doctors Creek flows into the Taylor River which is recognised as having significant recreational values for the community of Blenheim. In recognition

¹⁷ *ibid*

of this, funding for a Catchment Characterisation study was approved by the Environment Committee in 2012¹⁸. This work was completed in 2013 and identified causes of poor water quality were bank erosion and stock access to the creek. This resulted in a Freshwater Improvement Fund project to mitigate the identified issues through native planting and fencing.

Another Catchment Characterisation has been completed for the Tuamarina River Catchment, as State of the Environment monitoring at the bottom of the catchment has shown that water quality is in the marginal category and considered degraded under the pMEP¹⁹. Given the presence of the Para Wetland, aquatic ecology was also studied. Recommendations have been made for both further monitoring and for a range of mitigating actions. Further reports on catchment water quality have also been completed for Are Are Creek, Waitohi/Waikawa River catchments and the Linkwater Area.

These Catchment Characterisations identify the issues of concern and will provide the technical water quality basis for their associated Catchment Enhancement Plans within the Catchment Care programme.

¹⁸ S. Henkel. 2015. *Taylor River Catchment Characterisation – Doctors Creek*. Marlborough District Council Technical Report No: 15-001

¹⁹ S. Henkel. 2018. *Water Quality in the Tuamarina River Catchment*. Marlborough District Council Technical Report No: 18-002

Elements to be developed for Catchment Care

Iwi consultation and participation

In Marlborough, there are eight tangata whenua iwi: Ngāti Apa, Ngāti Koata, Ngāti Kuia, Ngāti Rārua, Ngāti Toa Rangitira, Ngāi Tahu, Rangitāne and Te Ātiawa. Each have a unique and rich cultural and spiritual heritage as tangata whenua.²⁰ This has been recognised under statutory acknowledgements.

Iwi management plans may also provide significant context and direction to Catchment Enhancement Plans under the Catchment Care programme. Consultation with tangata whenua is vital for catchment management, irrespective of whether an iwi management plan is in place or not.

Council intends to actively involve Iwi in the development and implementation of Catchment Care in a collaborative manner as required under the statutory acknowledgements.

Community consultation and engagement

Effective land and water management is dependent on consultation and engagement with local communities. Stakeholders and communities want to have a say on issues which impact on their livelihood, lifestyle and things they value. It is expected that Catchment Care will require substantial community consultation and that this will be conducted in a collaborative manner with stakeholders.

Council has identified degraded catchments for inclusion in the Catchment Care programme through its water quality monitoring programme. These are presented in the proposed Marlborough Environment Plan, and the community was consulted on this through the written submissions and hearings processes. While this identifies the degraded catchments where work is required and sets timeframes for action, funding limitations will require that any action on identified catchments will need to occur in a planned and staged manner. This implies a level of priority setting will be needed within the Catchment Care program.

The prioritisation of catchments will require the integration of multiple considerations. The waterbodies identified in the pMEP make up the highest priority catchments but within these some ordering is required to meet funding limitations. Practical issues must then be considered such as:

- Community stakeholder readiness.
- The existence of other programmes that Catchment Care could link to.
- The type of land use and the effect that it has on water quality or on sensitive receiving environments.
- The size of the catchments and their connections with neighbouring catchments. The interconnections between sub-catchments (up-and down-stream) is important. It may be necessary to address lower priority issues in an upstream catchment in order to more effectively implement mitigations downstream.
- Limited funding or Council capability may dictate that smaller, lower-priority catchments are addressed prior to other catchments with higher priority water quality issues.

A change in National direction is also expected in the near future. A revision of the NPS-FM is underway as part of the Governments Essential Freshwater programme. Results of this work may dictate that Council acts to improve water quality in certain catchments and negating local prioritisation.

The prioritisation of catchments will occur prior to commencement of Catchment Enhancement Planning processes. It is expected that prioritisation will follow direction from Council's Environment Committee after presentation and consideration of the above factors.

²⁰ Proposed Marlborough Environment Plan

Engagement should now occur at the catchment level, with landowners and other stakeholders participating in the initial stages of developing a CEP, particularly focusing on establishing values, discussing key issues and identifying actions that could be undertaken. A more formal framework outlining the methodology of community consultation during the development of a CEP will be developed and this will be detailed in the forthcoming Community Consultation and Engagement (CCE) operational guide.

Value identification.

The proposed Marlborough Environment Plan has identified a series of Water Resource Unit Values (Appendix 5-Schedule 1). These values indicate if a waterbody meets a series of Water Quality Classification Standards (Appendix 5-Schedule 2). These help to identify the different values that could be associated with a water body. For example; the Lower Pelorus river is identified in Appendix 5-Schedule 1 as having values associated with contact recreation. To hold this value water in the river must not exceed given *E. coli* limits (dependant on time of year and water flow).

The Water Resource Unit Values set a starting point for value identification in a Catchment Enhancement Planning process. In addition to these values, communities may hold their own unique local values that they wish to have considered as part of the CEP process. It is important that both WRU Values from the pMEP and the local community and cultural values are included in the Catchment Enhancement Plans. It is noted that the NPS-FM and other national legislation may influence the values associated with a water body. This may include a cumulative contaminant limit setting process in the future.

There are a range of important regional values of land and water, with many competing with each other. These can include social, economic and environmental values. Land and water management requires an aligning of interests to find common ground for mutually beneficial outcomes. Bringing catchment communities together in facilitated meetings can be a constructive way of aligning values and determining priorities for action. A list of potential values will be developed as a starting point for CEP discussions.

Catchment Enhancement Plans

The proposed Marlborough Environment Plan requires a catchment-specific plan for enhancing water quality to be developed for each of the identified degraded rivers. The key driver for CEPs, as identified in the pMEP, is water quality. An effective focus on water quality improvement does require a catchment-based approach and recognition of the effects of land use and land management practices on water quality and associated values. A catchment plan may infer an integrated catchment approach, which considers a broad range of issues within a hydro-geographically defined area. However, the title of 'Catchment Enhancement Plan' potentially broadens the scope beyond this. For the sake of clarity, these plans will be directed at enhancement of water quality by addressing the contaminants of concern. They can be thought of as "Catchment Enhancement Plans for water quality outcomes".

While it is important to recognise the interconnections of catchment processes and the range of values that the community will bring, the purpose, scope and content of the Catchment Enhancement Plans will be clearly defined in the forthcoming Community Engagement and Catchment Enhancement Plans operational guide along with a draft CEP template.

Community Engagement and Catchment Enhancement Plans Operational Guide

Detail on Community Engagement and associated Catchment Enhancement Plans shall be included in a future guide to land management staff. This report will include information on:

- engagement with Iwi
- engaging with resource users and communities at the catchment level
- developing a more formal framework of community consultation
- collaboration and engagement principles
- determining who are the relevant stakeholders

- determining the size of the CEP group
- developing list of potential water quality and community values
- defining the content of a CEP.

Implementation Methodology Operational Guide

The improvements in land and water quality that are expected from the Council's Catchment Care programme are dependent on implementation. Implementation can be conceptualised on two levels:

1. The preparatory, behind-the-scenes implementation of a range of processes or methods by the Council that direct, inform, encourage and support landowners in their implementation.
2. The physical, on-the-ground implementation of good management practices and mitigation actions by the landowner that are expected to contribute directly to soil conservation and water quality improvements.

The preparatory first aspect of implementation includes the processes, methods or instruments that the Council can employ. They include:

Practice change

The implementation of Catchment Enhancement Plans may involve changes to the way landowners manage their land. For example, a farmer may need to change fertiliser applications in order to improve nutrient losses from their farm. Sometimes these changes in practice can be challenging for landowners. Landowners may view practice changes as a threat to productivity.

In order to facilitate beneficial practice change, Council needs to have a good understanding of how to communicate the benefits and drawbacks of the proposed changes. This shall be addressed in more detail in the Implementation Methodology Operational Guide.

Information sharing

There is a vast body of technical and experiential information that underpins good catchment management practice and effective mitigation actions. This includes literature on the elements of effective practice change / rural extension / technology transfer, and a general acknowledgement that no single model or strategy is likely to be sufficient by itself²¹. Such information is not readily accessible to landowners, who are commonly juggling multiple family, business and management roles on their operations, often in relative isolation. Many councils have drawn key relevant information together into Fact Sheets and other guides. These are useful references, particularly to support one-on-one activity, field days and property-level planning processes.

Many seasoned soil conservation professionals have a good feel for what works with different communities, farm sectors and individual farmers. It should be noted that at writing Council has limited experience and capability in soil conservation and catchment management. Council will be seeking to build and learn alongside communities and will seek external advice where necessary. It is important to have a wide range of instruments in the toolbox – some to direct, some to educate, some to incentivise and some to simply 'make it happen'.

One-on-one advice and support

Engagement at the one-on-one level with landowners is fundamental to effective practice change in some cases. Localised and personalised engagement improves learning outcomes, enhances trust, encourages innovation and leads to greater uptake of good management practices and mitigation actions. It is, however, very resource-intensive for the Council. Therefore one-on-one engagement should be made available within a wider implementation framework that supports landowners to be pro-active and enables input from a wide range of

²¹ A.W. Black. 2000. Extension theory and practice: a review. Australian Journal of Experimental Agriculture, **40**, 493-502.

providers. Providers may need to be certified to ensure an appropriate level of skill. This aspect will be investigated in the implementation toolbox report.

Field days and demonstration farms

Field days and demonstration farms have been used by regional authorities and sector organisations for many decades with good effect. While it is necessary to put considerable effort into planning and advertising a good field day, there are huge benefits to be gained from Council staff fronting up. Field days enable the:

- sharing of information and ideas,
- facilitation of information-sharing between landowners,
- building of relationships and community bonds,
- demonstration of 'what works' on properties that are comparable to those of the attendees.

Industry and sector engagement

Industry and sector bodies generally have a deep understanding and relationship with their constituents, are well informed on the issues facing their sector (including environmental). Many have existing extension programmes, including provision of information and advice, monitor farms, field days, and various forms of property level plans. Engagement with industry and sector bodies provides a channel for information to be passed on or open up opportunities for staff to engage with their constituents directly, with both efficiency and effectiveness benefits. It is, however, important to retain control over the messaging, and in particular to remain the face of any funding assistance programmes.

The second aspect of implementation involves the physical on-the-ground actions that complete the actions identified in Catchment Enhancement Plans. In broad terms these include:

Property-level planning

Catchment Enhancement Plans are a useful mechanism to draw a community together and provide broad direction for addressing key issues. However, individual properties are the primary locus for the implementation of good management practices and mitigation actions. The Land and Water Forum²² describes evidence that certain practice changes and mitigations are effective at reducing sediment and nutrient losses from land and, that property level planning can be effective at delivering these changes and reductions. Regional authority water quality monitoring data also shows that property level planning and the associated implementation of certain practices and mitigations have a beneficial impact on water quality attributes²³. The term property-level plan does not refer to a wider scope farm environment plan. The property-level plan only seeks to address the contaminants of concern identified in the CEP process.

Engagement at the one-on-one level with landowners is a fundamental aspect of effective practice change on farm. Localised and personalised engagement improves learning outcomes, enhances trust, encourages innovation and leads to greater uptake of good management practices and mitigation actions. Council will seek to work with landowners to identify the on-farm sources of the contaminants of concern and to assist with the development of a property-level plan to mitigate these.

A large part of the onus for improvement will be on landowners, and it is vital that they each have a property-level plan resource that addresses the contaminants of concern by:

- identifying critical source areas;
- identifying appropriate mitigations; and

²² *Land and Water Forum advice on improving water quality: preventing degradation and addressing sediment and nitrogen - May 2018.* <http://www.landandwater.org.nz/>

²³ Waikato Regional Council TR18/30 - Trends in river water quality in the Waikato Region, 1993-2017, December 2018

- planning out the actions that will be undertaken and when.

The pMEP has recognised the value of water quality and nutrient management plans in relation to the dairy sector, with Method 15.M.25. Council did not include similar plans for other farming types in the pMEP as it recognises the wide range of property planning needs and plan types available to industry currently. Council also recognises that many landowners will already hold a farm environment plan that may address the contaminants of concern. Such plans, where they exist, may meet the requirements of a property-level plan and further planning work may not be required. Through the liaison methods described in the pMEP, Council will seek to work with property level planning providers in a collaborative manner to directly address the contaminants of concern identified in the CEP. By engaging with landowners and planning providers, Council is seeking to reduce duplication and costs to industry.

Where possible, property level planning should involve the use of GIS technology as a planning, recording and monitoring tool. This will enable more rapid and transparent reporting to ratepayers and external funders. Where property level planning is performed by other providers, council will seek to record these plans in electronic form preferably a common GIS format. Recently a common GIS standard has been published by the Ministry for Primary Industries, Hill Country Erosion Fund. Council has based its GIS recording software development on these standards.

Good Management Practices [and GFP]

Knowledge of good management practices is instrumental in achieving practice change and improved environmental outcomes. Developing a set of agreed good management practices can provide direction, encourage shared goals and even competitiveness to reach them, and can be drawn on for property-level plan development. Some regions (e.g. Canterbury) and some sectors (e.g. Beef+Lamb, DairyNZ) now have agreed practices or guidelines, and central government has worked with the various sectors to develop a set of Agreed National Good Farming Practice Principles²⁴. Due to the process of minimising dissent from sectors, the resulting principles are somewhat broad. However, MDC will seek to develop a region-specific Good Management Practice guide using these as foundational principles. These may differ from sector to sector.

Planting

Soil conservation and erosion control methods include dense and spaced planting of both native and exotic trees, shrub and grasses in strategic locations. These locations can include; hillsides, eroding areas, gullies and riparian areas. Species and techniques can vary depending on the location, issue of concern and landowner preferences. Which species/species mix and technique is appropriate for any given location is determined during the property level planning phase of implementation. Council will seek best practice guidance from other more experienced Councils to develop Catchment Care planting provisions.

It is Councils preference that plantings use native plants where possible to meet biodiversity goals. Native plants should ideally be grown from locally sourced seed where possible. However, the use of exotic species for some soil conservation and erosion control work is well established and where required, exotics can be used.

Protection of plantings will be required in order to receive funding for planting. This would usually involve fencing or plant guards. The need for these will be determined during the CEP /property-level planning stages. Responsibility for implementation and maintenance can also be negotiated during the planning stages.

Logistical and material assistance

Landowners are extremely busy people, juggling many business, operational and compliance roles. Sometimes, the difference between implementing a planting or other mitigation programme on a property or not simply comes down to time and priorities. Planting is often outside of a person's skill base. Through providing logistical

²⁴ Good Farming Practice Action Plan for Water Quality 2018 <http://www.hortnz.co.nz/assets/Our-Work-files/Good-farming-practice-for-water-action-plan-2018.pdf>

assistance of determining the number and type of trees and arranging the order and delivery, and perhaps also through providing planting labour, Council will act to effect change and action where it would not otherwise occur.

Implementation Methodology Operational Guide

A Implementation Methodology Guide for land management staff will include:

- a discussion on the theory of practice change.
- more detailed consideration of each implementation instrument including:
 - key features of the instrument
 - key content
 - how to develop it
 - where it has been used successfully
 - what elements are required for success
- In particular, this guide will detail:
 - How Council should work alongside landowners in the development of their own property level plans
 - The level of detail required for a property level plan
 - How property level plans should be developed by a skilled land management person working alongside the land owner
 - How each plan should directly address the on-farm issues of concern
 - How Council should monitor compliance with agreed plans.

Funding Assistance Operational Guide

It is widely recognised by both central and regional authorities that while landowners are keen to implement change, practice change can be hard, and mitigation actions can be expensive. Incentivisation is a widely-used instrument. Many regional councils offer a grant scheme whereby they fund a proportion of eligible mitigation works, usually within a certain dollar limit. Council will begin development of its own grant scheme. Council will seek to improve this scheme by copying the best aspects of other regions' schemes. Such schemes are commonly funded through a combination of council, landowner and government funding to typically make 1/3 shares in implementation cost. Landowner or Council share can also be in-kind funding. Some initial council funding is available through current budgets however, further council funding needs to be sought. This will require a funding application through both Annual and Long-Term Council Plans.

In some regions, there is a base level of grant (e.g. 33%) that any eligible works within the region may attract. In others, only priority catchments may attract funding. Generally, one of the eligibility criteria is some form of plan and funding is never retrospective. An application process should be followed, with assessment against set and weighted criteria, and all project claims and payments must be accounted for in a simple and transparent system. Where possible this system should be electronic and enable rapid approval of applications.

Funding partnerships

In its approach to ensuring sustainable management of our natural and physical resources, central Government recognises that non-regulatory support is a critical complement to regulatory direction. There are a range of non-regulatory advisory and funding support programmes initiated by central Government that are relevant to and may be utilised by the Council's Catchment Care programme.

Some of these funds are directed toward landowners, and the Council will seek facilitate the uptake of external funding to further Catchment Care. Other funds may be applied for by the Council to support its programme and develop some of its implementation instruments.

Funding Assistance Operational Guide

A guide for land management staff on Funding Assistance will outline the options for:

- Structure of the Catchment Care grant scheme
- funding criteria for the scheme
- funding sources both internal and external to Council
- development of templates for applications, assessments, claims and payments.
- monitoring of funding allocation.

Information and Monitoring

In relation to the implementation of the Catchment Care programme and Catchment Enhancement Plans, ongoing monitoring will be a critical source of information both to landowners within a catchment and to the wider community of ratepayers. This will inform how effective the changes in land management practices and other mitigations are in improving water quality. This is significant for the education, morale and motivation of landowners, and for the confidence of ratepayers in the catchment programmes.

However, water quality monitoring is primarily a long-term trend tool. There can be a significant time lag between implementing mitigation activities and measuring improvements in water quality. Other factors may confound the results. It is also difficult to assign improvements in water quality to specific locations or specific actions. Therefore, it is also important to monitor the implementation of activities that are known through scientific research and case studies to have a beneficial effect on water quality. Some mitigations can be recorded within the Catchment Enhancement Plans, while others may be recorded in property-level plans. Monitoring will in effect be an audit of actions undertaken.

In order to document the results of implementation, Council will seek to establish both pre-and post-implementation water quality data. This work will seek to remove as much variability as possible given the dynamic nature of water quality monitoring. Where possible (and technically feasible), Council will seek to use electronic methods to provide real-time continual time series data for water quality attributes.

In addition to this, the proposed and completed implementation measures will be recorded and monitored. This will be undertaken by Council land management staff and include routine visits to sites where mitigations have been implemented. The progress of the mitigations shall be documented electronically where possible to enable collated national reporting where required.

Future Directives

Directional feedback occurs from the wider public, their representatives in central Government and various other forums. The Land and Water Forum recently provided advice on improving water quality to the Minister of Agriculture and the Ministry for the Environment.²⁵ Many of the recommendations have been incorporated into the government's Essential Freshwater work programme, which will "set New Zealanders on the path to turning around water quality trends and long-term improvements in freshwater health".²⁶ The three objectives of Essential Freshwater are:

- Stopping further degradation and loss
- Reversing past damage

²⁵ Land and Water Forum advice on improving water quality: preventing degradation and addressing sediment and nitrogen - May 2018. <http://www.landandwater.org.nz/>

²⁶ Ministry for the Environment and Ministry for Primary Industries. 2018. *Essential Freshwater: Healthy Water, Fairly Allocated*. Wellington: Ministry for the Environment and Ministry for Primary Industries.

- • Addressing water allocation issues.

There are six workstreams within the programme:

- Targeted action and investment in “at-risk catchments” (occurring now)
- Amendments to the Resource Management Act
- New National Policy Statement for Freshwater Management (anticipated to be in force by 2020)
- New National Environmental Standard for Freshwater Management (anticipated to be in force by 2020)
- Government engagement in developing options for allocating water resources, starting with allocation of discharges to water (in the first quarter of 2019)
- Future policy framework development (ongoing work programme).

The outcomes of these workstreams will impact on the Council’s management of freshwater in its region, and may require review of elements of the pMEP and of the Catchment Care programme. Central Government’s direction on water quality makes it imperative for the Council to move positively on its own programme of water quality improvement and associated works.

The planned work flow for Council to develop the Catchment Care programme is:

- present this report to the Environment Committee for approval

following acceptance of this report Council will:

- Continue to develop the Catchment Care programme by:
 - Commissioning further Operational Guides to inform land management staff of the best practice in:
 - Community Consultation and Engagement including development of CEPs
 - Implementation Methodology including theory of practice change and property level planning
 - Funding assistance including the development of a grant scheme
- Commence catchment enhancement planning processes where directed by the pMEP and /or prioritised in other ways.
- Commence implementation work upon completion of CEP processes

APPENDIX ONE- Additional methods to assist with Catchment Enhancement Planning

The pMEP describes a number of methods that can be used in the development of CEPs. In addition to the key methods described in Part Two of this document , several additional methods are described in the pMEP. These include:

Relating to both the land and water aspects of Catchment Care are:

- 15.M.18 Liaison (Rural Industry Groups):
Work with established rural industry groups to develop and implement sustainable land management programmes. The initial focus will be on viticulture, pastoral farming (especially dairy and intensive beef farming), arable farming and forestry, but may be expanded to other rural activities if the need arises.
Rural land uses upstream of or adjacent to rivers that have degraded water quality and rural land uses in groundwater protection areas are a priority for sustainable land management programmes.
Work with landowners and community groups to establish and enhance riparian margins and improve water quality.
- 15.M.19 Incentives:
Consider the use of incentives, such as rates relief and the provision of plant material and fencing at low cost to landowners for riparian management purposes.
- 15.M.20 Monitoring:
Monitor groundwater within groundwater protection areas to establish the effect of existing land use activities on groundwater quality.
- 15.M.21 Information:
Provide information, including guidelines, to landowners, resource users and the public:
 - *to generally promote awareness of water quality issues; and*
 - *to encourage the adoption of appropriate land management practices to minimise non-point source discharges.*

Although the focus of method 15.M.21 will be on rural resource users, the information will also be applicable to residential situations (in both rural and urban environments) and provide information on the benefits of retiring and planting riparian margins. This will include information on the appropriate width of riparian margins and suitable plant species, taking into account the variation in the nature of waterbodies/coastal waters and the adjoining rural land uses. Information on options for formally protecting retired riparian margins can also be provided.

- 15.M.22 Research:
Where appropriate, support research into the cumulative effects of land use (including land use intensification) on water quality and improved land management practices. Undertake investigations to gain a better understanding of the impact of particular rural land use activities on water quality and encourage rural industry groups to participate in the investigations.
- 15.M.23 Advocate:
Advocate to the manufacturers and suppliers of agrichemicals and fertilisers to strengthen the education and information provision role they play with a view to minimising the likelihood and potential effects of agrichemical and fertiliser application on water quality.

- 15.M.24 Codes of practice and industry guidelines:
Advocate to rural industry groups that they, locally or nationally, prepare and adopt codes of practice or other guidelines aimed at reducing the effects of non-point source discharges where they do not already exist.
- 15.M.25 Management plans for dairy farming
Water Quality Management Plans can be used as a means of demonstrating on an ongoing basis that any adverse effects on water quality resulting from dairy farming will be avoided, remedied or sufficiently mitigated. They provide the ability to consider all farm management practices with the potential to adversely affect surface or groundwater quality or wetlands and manage these risks in an integrated way. This also enables the dairy farmer to progressively plan farm upgrades based on priority or in the case of new farms, at the time of establishment. Water Quality Management Plans can be used to support applications for land use consent to convert the use of land to dairying. Nutrient Management Plans will be required as a means to demonstrate how nutrient inputs associated with dairy farming are to be managed to ensure any adverse effects on water quality will be avoided, remedied or mitigated. Nutrient Management Plans should be written documents that incorporate a nutrient budget developed by an accredited nutrient adviser using OVERSEER® or similar. This should describe how the major plant nutrients (nitrogen, phosphorus, sulphur and potassium) and any other nutrients of importance to specialist crops will be managed (including all sources of nutrient - for example, discharges from farm dairy effluent systems, animal discharges and/or atmospheric nitrogen fixation).

Methods of relevance to the land component of Catchment Care are:

- 15.M.39 Liaison:
To work with established rural industry groups to develop and implement sustainable land management programmes. The initial focus will be on viticulture, pastoral farming (especially dairy and beef farming), arable farming and forestry, but may extend to other rural activities if the need arises. Encouraging group members to practice nutrient budgeting (with the exception of the forestry industry) will be a priority. Farm management plans may assist rural property owners to identify appropriate responses to soil erosion issues on their land. The Council may help to develop such plans if requested. Liaise with the Department of Conservation regarding any soil erosion issues on Crown land managed for conservation purposes.
- 15.M.40 Information:
Provide information to landowners and resource users to promote recognition of soil quality issues, encourage the adoption of practices and techniques for avoiding unnecessary damage to soil structure and maintain soil nutrients at appropriate levels. Information could be prioritised so that information is provided to those landowners and resource users on the most vulnerable soils. The Council will promote the use of the Visual Soil Assessment tool to enable resource users to monitor soil quality on their own properties.
- 15.M.42 Codes of practice and industry guidelines:
Advocate to rural industry groups that they, locally or nationally, prepare and/or adopt codes of practice or other guidelines, where not already in place, aimed at reducing the effects of rural land uses on soil quality. This could include the Code of Practice for Nutrient Management developed by the New Zealand Fertiliser Manufacturers' Research Association.
- 15.M.45 Monitoring:
Continue to undertake a regional monitoring programme to gather information on soil quality variables. This will enable the Council to identify the effects of land use activities and practices on soil quality. The monitoring programme is designed to ensure that information is gathered from representative soil types across Marlborough and reflects the nature and intensity of the predominant

land uses. The programme includes soil intactness monitoring to establish the extent of accelerated soil erosion. The results will help the Council to identify those soils most vulnerable to degradation and allow the application of the above methods to be prioritised. Undertake monitoring of the effect of specific land disturbance activities and land use changes on the soil resource. This can be implemented through monitoring required as a condition of resource consent or through state of the environment monitoring. Monitoring the effects of forest harvest activities in the coastal environment of the Marlborough Sounds is a priority.