# Land and Water Regional Plan


**September 2003**

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**Front Cover Photo**
Coppermine Creek in the Tararua District
Nicola Jackson

**September 2003**

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# LAND AND WATER REGIONAL PLAN

This Land and Water Regional Plan was prepared by the Manawatu-Wanganui Regional Council under Section 60 and the First Schedule to the Resource Management Act 1991.

The Manawatu-Wanganui Regional Council approved the Land and Water Regional Plan on this **26th** day of **August** 2003.

Signed by the Manawatu-Wanganui Regional Council by the affixing of its Common Seal in the presence of

P M Davies
**CHIEF EXECUTIVE**

C J Lester
**CHAIRMAN**

The Land and Water Regional Plan became operative on

**Tuesday, 30 September 2003**

# FOREWORD

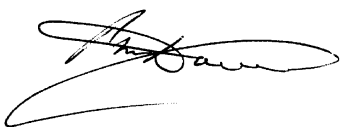
The natural and physical resources found in this Region need to be carefully managed so that future generations can benefit from the environment as we do now.

The **Land and Water Regional Plan** (the Plan) provides a framework for managing activities associated with discharges to land; discharges to surface water; surface water takes and uses; groundwater takes, uses, damming and diversion; and land management.

The Plan has been prepared to address the environmental effects of two groups of activities. First, those activities that have been covered by the provisions in the Transitional Regional Plan. Secondly those activities that are not covered in any other of the Manawatu-Wanganui Regional Council's regional plans. The Plan helps to integrate resource management with other regional plans.

The Plan provides for many permitted activities (subject to specified conditions), being activities with no significant adverse effects. Only those activities where the Council is not satisfied that adverse effects cannot be avoided, remedied or mitigated will require resource consents.

CJ Lester
**CHAIRMAN**



Peter Davies
**CHIEF EXECUTIVE**

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# CHAPTER ONE
# BACKGROUND

## 1. The Scope of this Plan

The Land and Water Regional Plan contains the regulatory framework to manage discharges of contaminants to land and water, and abstractions and uses of surface water and groundwater, and soil disturbance and vegetation clearance. The Plan applies throughout the Region, except the coastal marine area. Activities that are specifically provided for in the Manawatu Catchment Water Quality Regional Plan, the Oroua Catchment Water Allocation and River Flows Regional Plan, and the Regional Plan for Beds of Rivers and Lakes and Associated Activities are excluded from provisions in this Plan.

The statutory framework for managing natural and physical resources is the Resource Management Act, 1991 (the Act). The Act requires that a regional plan shall not be inconsistent with the New Zealand Coastal Policy Statement, a national policy statement, any water conservation order, the regional policy statement, or any regional plan in this Region.

There are two National Water Conservation Orders with effect in this Region. These are for the Manganui o te Ao River and the Rangitikei River. National Water Conservation Orders have a status greater than regional rules. They impose restrictions on the Council's powers as they relate to water and they can be changed or revoked only by the Minister for the Environment. These Orders are reproduced in Appendix 1.

## 2. Plan layout

The Plan is divided into eight chapters. Chapter One describes the scope of the Plan. Chapters Two, Three, Four, Five and Six contain the regulatory framework for discharges to land, discharges to surface water, surface water takes and uses, groundwater takes and uses, and land use. Cross referencing within the Plan assists users due to the interlinked nature of the issues addressed. The process and requirements for resource consent applications are in Chapter Seven. The procedures that will be used for resolving cross-boundary issues and for reviewing the Plan are described in Chapter Eight.

The Council has also prepared a Background Report to this Plan. The Background Report contains:

- the statutory framework, including the reasons for preparing the Plan;
- technical discussion about the regional environmental effects associated with all activities managed under provisions of the Plan;
- the planning process, including consultation, used for the development of the Plan; and
- all other matters required to be addressed by Section 32 of the Act.

# 3. Relationship with other Council Plans

The Land and Water Regional Plan (this Plan) has been prepared to address those provisions in the Transitional Regional Plan not covered in another plan and those activities not covered in any other regional plan. The Council has five other regional plans, which are all operative. These plans are the:

- Regional Coastal Plan;
- Manawatu Catchment Water Quality Regional Plan;
- Oroua Catchment Water Allocation and River Flows Regional Plan;
- Regional Air Plan; and
- Regional Plan for Beds of Rivers and Lakes and Associated Activities.

This Plan extends the provisions of other plans, such as provisions in the Manawatu Catchment Water Quality Regional Plan, over the rest of the Region. The Land and Water Regional Plan applies throughout the Region, except for provisions specifically provided for in the following regional plans:

- Regional Coastal Plan;
- Manawatu Catchment Water Quality Regional Plan;
- Oroua Catchment Water Allocation and River Flows Regional Plan;
- Regional Air Plan; and
- Regional Plan for Beds of Rivers and Lakes and Associated Activities.

Cross referencing has been used throughout the Plan to assist plan users where another regional plan should be used.

Three strategies have also been produced which provide non-regulatory methods to achieve specific environmental outcomes. They are

- Whanganui Catchment Strategy;
- Lake Horowhenua & Hokio Stream Catchment Management Strategy; and
- Land and Riparian Management Strategy.

These strategies contain objectives and suggested actions, not rules, and are based on co-operation with the regional community. The strategies specify non-regulatory methods that will also help achieve the objectives of this Plan.

Following is a brief outline illustrating the relationship of this Plan and other regional plans.

## 3.1 Manawatu Catchment Water Quality Regional Plan

The Manawatu Catchment Water Quality Regional Plan (MCWQ) addresses degradation of water quality in the Manawatu Catchment. The Manawatu Catchment Water Quality Regional Plan describes water degradation issues and includes management procedures to address those issues.

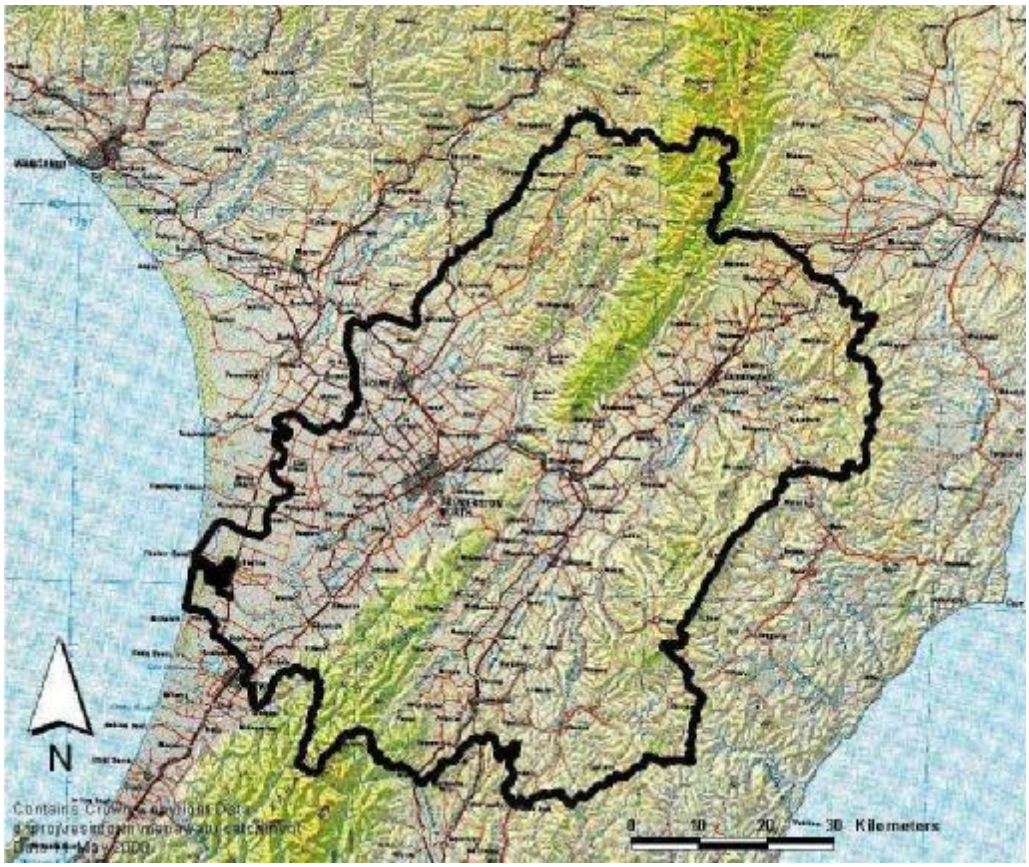
All rules relating to discharges to land, discharges to surface water and discharges of contaminants or water to surface water in the Land and Water Regional Plan, are based on rules set out in the MCWQ. MCWQ rules apply in the Manawatu Catchment only, elsewhere in the Region the rules in this Plan apply. The rules in this Plan that apply throughout the Region, except in the Manawatu catchment, address:

- pit latrines;
- on-site sewage discharges into land;
- on-site sewage discharges onto land;
- discharges of agricultural effluent;
- discharges near rivers, lakes, natural wetlands and the coastal marine area;
- discharges to rivers protected by National Water Conservation Orders;
- discharges of untreated effluent;
- discharges to lakes and natural wetlands;
- discharges to rivers, drains and other surface water;
- discharges of water and stormwater; and
- discharges of water and stormwater from industrial or trade premises.

In addition, this Plan contains provisions not included in the MCWQ that apply to the whole of the Region. For example, rules for discharges to land include:

- discharge of persistent or harmful contaminants;
- application of fertiliser;
- offal pits;
- farm and domestic dumps;
- aerial application of sodium monofluoroacetate;
- solid waste disposal;
- discharges of stormwater to land;
- discharge of sediment, weed and other material extracted from waterways;
- application of agricultural chemicals; and
- discharge of contaminants not otherwise provided for.

This Plan contains rules covering vegetation clearance and soil disturbance to protect water quality in the whole of the Region. The water quality standards of these rules are consistent with the standards set out in the MCWQ and the Regional Plan for Beds of Rivers and Lakes and Associated Activities.



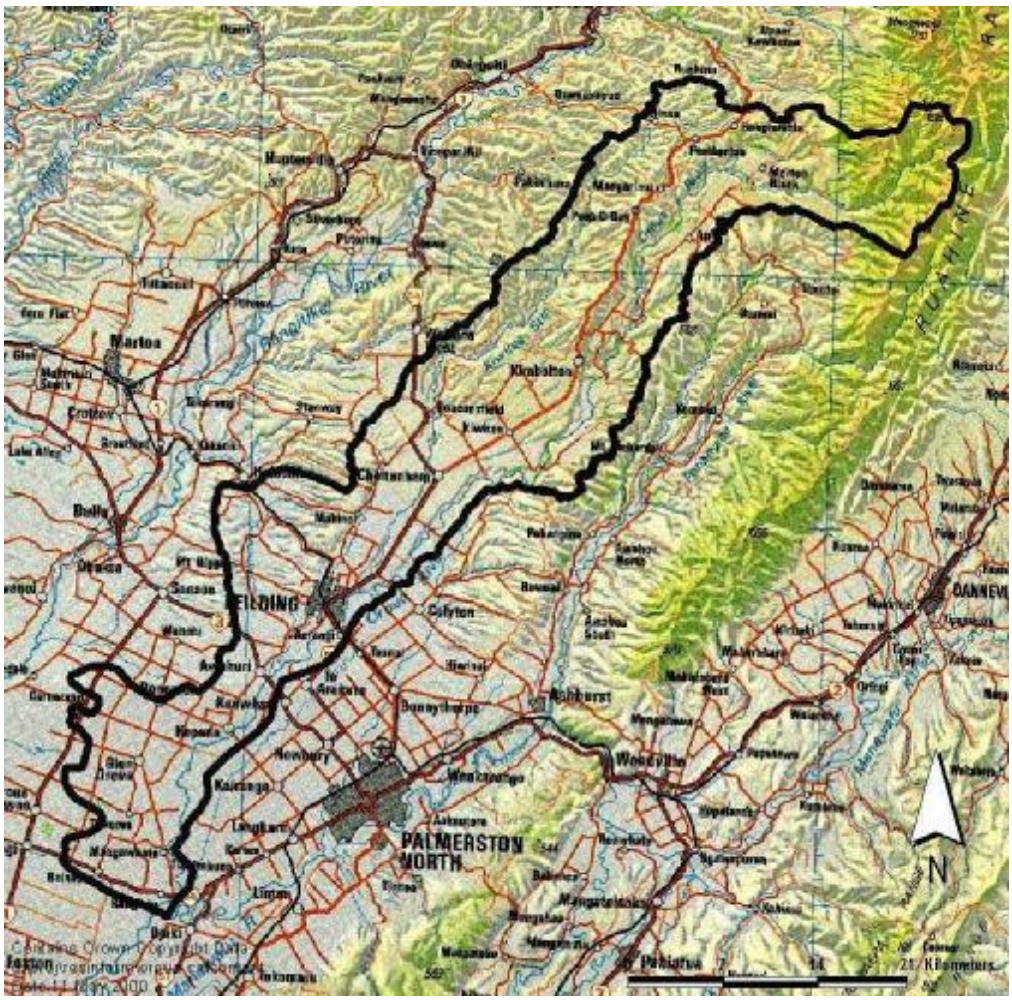

**Map 1: Manawatu Catchment**

## 3.2 Oroua Catchment Water Allocation and River Flows Regional Plan

The Oroua Catchment Water Allocation and River Flows Regional Plan (OCWA) contains rules to apportion, restrict and suspend abstractions during periods of low flow, and to allow the transfer of water permits in the Oroua River and Kiwitea Stream. Water abstraction and waste discharge are managed to address the restoration of water quality in the catchment, and to resolve conflict between protection of the rivers, water abstraction and waste discharge.

This Plan restricts the taking of surface water throughout the Region, except in the Oroua Catchment. The Oroua Catchment is managed by provisions in the OCWA. Surface water abstraction rules within this Plan that apply throughout the Region, except the Oroua Catchment, address:

- takes from rivers protected by National Water Conservation Orders;
- takes from the Hautapu, Mangatainoka or Makuri Rivers and their tributaries;
- Whanganui River minimum flows;
- permitted surface water takes;
- all other surface water takes; and
- use of heat or energy from surface water.




**Map 2: Oroua Catchment**

## 3.3 Regional Plan for Beds of Rivers and Lakes and Associated Activities

The Regional Plan for Beds of Rivers and Lakes and Associated Activities (BRL) has been prepared to manage activities in the beds of rivers and lakes, specific adjoining areas, and associated damming and diverting of water. The BRL establishes a framework in which to manage the differing and often conflicting demands on the Region's river and lake beds.

The BRL specifically provides for:

- maintenance of existing structures;
- removal or demolition of structures;
- dam structures and damming;
- diversion of water and structures for diversion;
- other structures;
- bed disturbance;
- planting, layering, disturbance or removal of plants;

- reclamation and drainage; and
- structures and activities for flood protection, erosion control and the mitigation of flood hazards.

The BRL provides for activities in natural watercourses only. Activities in artificial watercourses are provided for in this Plan. Artificial watercourses include irrigation canals, water supply races, canals for the supply of water for electricity power generation, and farm drainage canals. Rules within this Plan do not exempt compliance with the relevant rules in the BRL and vice versa.

## 3.4 Regional Air Plan

The Regional Air Plan addresses environmental effects of discharges of contaminants to air in the Manawatu-Wanganui Region, except the coastal marine area. Local degradation of ambient air quality from dust and odour has been identified as a significant issue in this Region.

Some discharges to land (administered by this Plan) can also result in discharges to air. Policy in this Plan is consistent with provisions in the Regional Air Plan. The following activities (as specified in this Plan) must be in accordance with the Regional Air Plan or a resource consent:

- discharges of effluent onto land;
- application of fertiliser;
- discharge to air by spraying;
- application of agricultural chemicals; and
- soil disturbance that results in the depositions of dust beyond the property boundary.

## 3.5 Strategies

Strategies are non-regulatory and rely on voluntary compliance with recommended actions. Strategies are superseded by Regional Plans that contain rules relating to the same issues. However, as long as rules within the Plans are complied with, Strategy actions can take place.

### 3.5.1 Whanganui Catchment Strategy

This Strategy has been prepared to enhance the water quality and protect the values of the Whanganui River. The prime means to achieve this is to promote sustainable land management.

The goals of the Strategy are:

- to maintain the water quality of the Whanganui River at a standard that protects its cultural and amenity values and life-supporting capacity; and
- to achieve land management that minimises the extent of accelerated soil erosion.

Actions that the Regional Council will undertake, and that landowners and the community should undertake to achieve the specified goals, are outlined. Because the Strategy is non-regulatory, rules within this Plan and other regional plans relating to the same issues must be complied with when implementing Strategy actions.

### 3.5.2 Lake Horowhenua & Hokio Stream Catchment Management Strategy

The Regional Council, in conjunction with the Lake Horowhenua Trustees, Horowhenua District Council and the Department of Conservation (Wellington Conservancy) prepared this Strategy to specify actions to be undertaken to help restore and improve the water quality of Lake Horowhenua and the Hokio Stream. The Strategy also addresses activities throughout the Horowhenua catchment that may affect water quality.

The goal of the Strategy is:

- to restore the water quality of Lake Horowhenua and the Hokio Stream to a level that enables a satisfactory improvement in both cultural and amenity values and the life-supporting capacity of the lake and the stream by 2018.

Objectives and actions that each of the contributing organisations must undertake by specified time periods are outlined. The actions in this Strategy are non-regulatory, and any rules contained within regional plans regarding lakes and rivers must be complied with. Specifically, this Plan provides rules for discharges to lakes and natural wetlands, and discharges of water and stormwater to lakes, that must be complied with.

### 3.5.3 Land and Riparian Management Strategy

The Land and Riparian Management Strategy is a region-wide non-statutory document that promotes sustainable land management. In particular, this strategy addresses soil erosion, soil degradation, the effects of land use (such as fertilisers or cultivated areas) on water quality, and the state of the riparian margin.

The goals of the Strategy include:

- no increase in groundwater contamination, as indicated by the number of bores showing elevated levels of nitrate;
- groundwater levels are maintained;
- all land is used within its productive capability (referring to the physical aspect of sustainability, and not to whether a particular use is either wise or economically viable);
- the sand country has vegetation cover that provides protection against wind erosion;
- nutrient storage capacity and structure of soils are maintained; and

- maintain and enhance the amenity and intrinsic values of rivers, lakes and wetlands and their margins.

The Strategy is a voluntary approach to resource management and complements the objectives and methods of this Plan.

# CHAPTER TWO
# DISCHARGES TO LAND

## 4. Scope of this Chapter

Chapter Two contains the regulatory framework to address issues related to the discharge of contaminants onto or into land, whether or not the contaminant may enter water. These discharges are restricted by Sections 15 (1)(b) and 15 (1)(d) of the Act.

Activities **not** provided for in this Chapter are —

- discharges to land of on-site sewage and agricultural wastewater in the Manawatu catchment (these are provided for in the Manawatu Catchment Water Quality Regional Plan).

Any discharge of agricultural chemicals must be in accordance with the Regional Air Plan or a resource consent, other than agricultural chemicals applied using a vehicle mounted weed wiping device (DL Rule 17).

## 5. Issues

The receiving environment for discharges of contaminants to land is the soil, groundwater, nearby surface water, and the surrounding air. The extent of adverse environmental effects that can arise from such discharges depends on the type and amount of contaminant being discharged, and the sensitivity and limitations of the receiving environment. Factors affecting the suitability of the receiving environment are proximity to rivers and drains, soil type, depth to restrictive layers such as bedrock, depth to groundwater, ground slope, ground cover, and climate, in particular local rainfall.

In accordance with the potential and actual effects of discharging contaminants to land in this Region, and with issues identified in the Regional Policy Statement for Manawatu-Wanganui, the Council identified three issues to be addressed in this Plan.

**DL Issue 1 - Degraded groundwater quality in Horowhenua, and potentially in other areas**

Nitrate-nitrogen degrades groundwater quality in the Horowhenua area and potentially all of the sand country on the west coast of the Region. Soil types in those areas are permeable, making unconfined groundwater vulnerable to further contamination by discharges to land.

Groundwater use, and its potential for further use, is higher in these areas than elsewhere in the Region. Further contamination would compromise the

resource's ability to meet the reasonably foreseeable needs of future generations.

**DL Issue 2 - Degraded surface water quality**

The west coast of the Region is characterised by a number of coastal dune lakes. The best known are the Horowhenua, Papaitonga and Dudding Lakes, but all are important habitats for flora and fauna. There is greater pressure on the coastal dune lake catchments from discharges to land than any other area in this Region outside the Manawatu catchment.

The coastal dune lakes are naturally vulnerable to accelerated eutrophication because they are small, shallow and poorly flushed.[1] Shallow lakes are ideal for algal and weed growth (if sufficient nutrients become available) because of the good light conditions and higher temperatures. The small size and flushing capacity of these lakes mean that particulate and dissolved nutrients washed into a lake from its surrounding catchment will build up in the lake. All these factors make the coastal dune lakes particularly sensitive to direct and indirect discharges within their catchments.

Surface water quality data for rivers throughout the Region show that rivers are degraded by suspended solids and microbial contamination at moderate to high flows (flows greater than half-median flows). Some of this degradation is attributed to runoff contaminated by discharges to land.[2]

Pristine areas are particularly sensitive receiving environments. Tongariro National Park, for example, is an important tourist attraction in the Region, with cultural significance to Maori. These factors reduce its suitability as a receiving environment for wastewater particularly where the discharge may enter water where it can cause conspicuous changes in colour and visual clarity.

(Refer also to Chapter Six, LM Issue 4)

**DL Issue 3 - Soil quality degraded by persistent[3] contaminants**

Some land in the Region is severely degraded by persistent contaminants to the extent that future use of the land is restricted. Discharging persistent contaminants to land that can create additional 'contaminated sites' would restrict the future use of more land. This would mean that the potential of the resource to meet the reasonably foreseeable needs of future generations is not sustained, and the life-supporting capacity of the land and ecosystems is not safeguarded. Examples of 'contaminated sites' are: old gas works or timber treatment sites.

1 Eutrophication is a state of enrichment characterised by high levels of plant growth that build up organic matter on the lake bed.

2 Degradation caused by unsustainable land uses, as occurs in parts of the Whanganui catchment, is a separate issue addressed by methods and strategies outside this Plan.

3 "Persistent" chemicals are those that do not readily break down when released into the environment.

Some contaminants do not permanently contaminate land but can cause serious adverse effects on soil quality. Sodium, which is present in some industrial wastewater, can clog soils and destroy soil structure if there are no preventative measures taken. This can restrict the future use of the land and contribute to adverse effects of odour when wastewater ponds are on the ground surface. Such effects can be avoided or mitigated, for example, by the addition of calcium or by adjusting the pH.

# 6. Objectives

The Council has adopted four objectives to address the issues identified in Section 5 above. The reasons for adopting these objectives are given in Section 7.3 below.

**DL Objective 1 Improving groundwater quality**

To maintain groundwater quality in the Region, and to improve groundwater quality where it is locally degraded.

**DL Objective 2 Improving groundwater quality**

To reduce microbial contamination and nutrient leachate into groundwater.

**DL Objective 3 Improving surface water quality**

To reduce sediment, microbial contamination and nutrient runoff to lakes and rivers.

(Refer also to Chapter Three, DSW Objective 3; and Chapter Six, LM Objective 2)

**DL Objective 4 Safeguarding soil quality**

To avoid long-term soil quality degradation.

(Refer also to Chapter Six, LM Objective 3)

# 7. Policies

## 7.1 Policies

The Council has adopted four policies to manage discharges to land in this Region. These policies will achieve the objectives adopted in Section 6 above. They are implemented by methods given in Sections 8.1, 8.2 and 8.3 of the Plan, and provide guidance for the assessment of resource consent applications. The policies are explained in detail in Section 7.2. The reasons

for adopting these policies, in terms of Section 32 of the Act, are given in Section 7.3.

**DL Policy 1: Use of regional rules**

To manage discharges of contaminants to land by adopting regional rules that:

a. permit all activities that have minor effects on the environment provided specified conditions are met;

b. regulate those activities that have the potential to cause any adverse effect on the receiving environment that is more than minor, and where conditions to manage the activity need to be site-specific;

c. prohibit any activities that have an adverse effect on the environment and/or human health that cannot be adequately avoided, remedied or mitigated; and

d. contain measurable and enforceable conditions, standards and terms so that the community can undertake their activities with certainty.

**DL Policy 2: Matters to be considered for resource consent applications**

The Council will have particular regard to the following matters when considering resource consent applications for discharges of contaminants onto or into land:

a. the effects of the discharge on:

   i. groundwater quality and groundwater uses nearby, in particular any use for water supply;
   ii. river water quality, in particular effects on rivers with existing high water quality and positive effects resulting from the cessation of existing discharges to water;
   iii. any possible alternative receiving environment;
   iv. lake and wetland water quality, in particular the contribution of the discharge to nutrient and sediment levels in lakes or wetlands by overland runoff or by groundwater flows to the lake or wetland;
   v. soil quality;
   vi. air quality, in particular adverse effects from the intrusion of odour and visual contaminants;
   vii. human health and amenity values;
   viii. any significant indigenous vegetation and significant habitats of indigenous fauna; and
   ix. any specified value associated with any feature of regional significance identified in the Regional Policy Statement for Manawatu-Wanganui; and

b. the location of the proposed discharge in relation to any sensitive receiving environment or potentially incompatible land uses, in particular any neighbouring houses, schools, churches, marae, public areas, wetlands, lakes, springs, streams, the coastal marine area, or known areas of recharge to groundwater aquifers; and

c. the nature of the discharge with regard to tangata whenua concerns, and the effect of the discharge on mahinga kai, waahi tapu, marae and other resources or places of significance to tangata whenua; and

d. the proposed hydraulic loading, nutrient loading and biochemical oxygen demand loading, and the cumulative effect of these application rates with other discharges; and

e. the types and persistence of contaminants in the discharge; and

f. soil types between the ground surface and groundwater; and

g. existing groundwater quality, particularly levels of nitrate and microbial contamination; and

h. contingency measures available, such as storage ponds, to avoid the need to discharge during wet or windy periods; and

i. the proposed times and seasons of application, including method and rate of application; and

j. any relevant guidelines or standards, in particular the Public Health Guidelines for the Safe Use of Sewage Effluent and Sewage Sludge on Land[4]; and

k. the outcome of consultation between the applicant and affected parties; and

l. the social and economic well being and the health and safety of people and communities; and

m. any relevant code of practice and any management and maintenance systems.

**DL Policy 3: Restrictions on nitrogen loadings from wastewater discharges**

To ensure that the loading of nitrogen in discharges of wastewater to grazed pasture do not exceed 150 kgN/hectare in any 12 month period and do not exceed 50 kgN/hectare in any 24 hour period unless it can be demonstrated that:

[4] Department of Health, 1992: *Public Health Guidelines for the safe use of sewage effluent and sewage sludge on land,* Wellington.

a. greater amounts of nitrogen can be removed by crop management; or

b. groundwater is protected by overlying soils of low permeability; or

c. nitrogen will be removed by enhanced denitrification or by denitrification systems constructed and maintained for that purpose; or

d. groundwater would not be rendered unsuitable for domestic, stock, or industrial use; or

e. affected groundwater could not later contaminate any surface water body and result in any of the effects described in Section 107 of the Act.

**DL Policy 4: Use of non-regulatory methods for resource management**

To develop and adopt formal non-regulatory strategies for soil conservation and the effects of land use on water quality.

(Refer also to Chapter Six, LM Policy 4)

## 7.2 Explanation of policies

These policies establish the regulatory and non-regulatory framework to avoid or mitigate adverse effects caused by discharges to land throughout the Region.

DL Policy 1 provides direction to adopt an effects-based approach, required for the adoption of regional rules by Section 68 (3) of the Act.

DL Policy 2 provides guidance on matters the Council will have particular regard to when assessing a resource consent application to undertake an activity restricted by a rule in this Plan. These matters will be considered where the Council has the discretion to grant or refuse an application. This policy is consistent with the requirements of Section 104 of the Act.

The matters in DL Policy 2 recognise and provide for the issues associated with the various types of discharges to land in this Region. These matters are consistent with those identified in other regional plans prepared by the Council. Discharges to land can have adverse effects on water quality, soil quality, air quality and amenity values. This policy is consistent with policies in the Regional Air Plan and will help achieve the objective of that Plan.

DL Policy 3 provides guidance to limit nitrogen applications in wastewater discharges but not fertiliser application (see definition of fertiliser in the Glossary). Land treatment of wastewater is generally used as a disposal option, where practicable, when disposal to surface water is not possible. The Council has found permit holders applying wastewater at unsustainable rates

to small land areas, known as “sacrifice areas”. When nitrogen in the wastewater is applied at rates higher than is necessary for plant growth, rapid infiltration of nitrogen compounds to groundwater can result. Limiting nitrogen application rates will help ensure that groundwater is not contaminated by nitrates.

DL Policy 3 does not restrict the application of fertiliser. Fertiliser is applied to pasture and crops specifically to promote plant growth, not to dispose of an unwanted waste product (i.e. animal effluent). For some industries the over-application of crop fertiliser would be uneconomic and inefficient, and would represent a cost to the farmer. The Regional Council will actively promote the adherence to the Code of Practice for Fertiliser Use developed by the New Zealand Fertiliser Manufacturers’ Research Association. The rules in this Plan therefore differentiate between nitrogen applications that need to remain regulated, and those that can be left to the discretion of the person applying the fertiliser.

DL Policy 4 provides guidance for the development of non-regulatory methods to achieve environmental outcomes in land management. This policy links the Plan with the Land and Riparian Management Strategy, also prepared by the Council.

## 7.3 Reasons for adopting the objectives and policies

The objectives have been adopted to address the issues associated with discharges to land. The Regional Policy Statement for Manawatu-Wanganui (Policy 11.3) promotes land disposal of contaminants in areas where groundwater will not be adversely affected and where adverse effects on surface water can be minimised or avoided. In adopting these objectives, the Council has had particular regard to the maintenance and enhancement of amenity values, the intrinsic value of ecosystems, and the maintenance and enhancement of the quality of the environment (Section 7 of the Act).

DL Policy 1 has been adopted to ensure that discharges to land are managed according to the significance of any adverse effect they may have on the environment. The effects of many discharges to land are minor, or can be managed by the enforcement of appropriate performance standards. A framework of regional rules with appropriate standards clearly informs the community about the Council’s implementation of the regulatory provisions of Section 15 of the Act.

DL Policy 2 has been adopted to help achieve DL Objectives 1, 2, and 3, and to assist the Council in achieving its function of controlling discharges of contaminants to land. This Plan must provide effective guidance for assessing resource consent applications. The matters included in this policy are consistent with the matters in Section 104 of the Act, and with the specific issues relating to discharges to land in this Region. These matters also recognise and provide for the consideration of circumstances where discharges to land may also present beneficial effects to some potential receiving environments, by providing an alternative to discharging to surface water.

DL Policy 3 has been adopted to achieve DL Objective 1. Groundwater is polluted with nitrate-nitrogen in the Horowhenua area and potentially in other areas as well. Waikato studies showed that when grazed pasture has an application of 400 kg N/hectare/year, groundwater nitrate levels increased from around 10 mg/litre to between 20 and 30 mg/litre. When the application rate was 200 kg N/hectare/year the groundwater showed a small increase over that in the non-irrigated pasture, which showed a drop in groundwater nitrate levels from around 10 mg/litre to between 5 and 10 mg/litre.[5] The loss rate from nitrogen (through volatilisation and leaching) increases above application rates of 50 kg/hectare.[6]

The Council has restricted nitrogen application rates to 150 kgN/hectare/year due to the sensitive area of the sand country along the west coast and around Horowhenua. This figure is consistent with the levels applied on the east coast of the Tararua-Ruahine Ranges in the Manawatu catchment.

The Council is satisfied that these policies are necessary to achieve the purpose of the Act, and that they are the most efficient and effective means of controlling discharges of contaminants to land in this Region.

DL Policy 4 has been adopted to help achieve DL Objectives 2 and 3. The Policy will assist the Council in achieving its functions in areas where regulation will not be either effective or practical. The main way non-regulatory methods will be developed and presented is in the development of non-regulatory strategies. Strategies are documents that set policies for the Council and commit staff and resources to undertake specified actions for achieving agreed environmental objectives. The Council considers that non-regulatory strategies are more effective where

- community ownership and buy-in is vital for success;
- non-point source impacts on the environment make specification of property rights impractical; and
- cause and effect relationships are not clear.

[5] Ledgard, S. F., Selvarajah, N., Jenkinson, D., and Sprosen, M. S., Groundwater nitrate levels under grazed dairy pastures receiving different rates of nitrogen fertiliser. Environment Waikato, PO Box 4010, Hamilton. See also Selvarajah, N., G. R. Maggs, J. R. Crush, and S F. Ledgard, 1994. Nitrate in groundwater in the Waikato Region. **In** The Efficient Use of Fertilisers in a changing environment: reconciling productivity with sustainability . (Eds. L. D. Currie and P. Loganathan). Occasional Report No. 7 Fertiliser and Lime Research Centre, Massey University, Palmerston North. See also Selvarajah, N., 1996. Determination of Sustainable Nitrogen loading rates for land treatment systems without adequate soil and ground water information: dairy farm effluent application onto grazed pasture in the Waikato Region. Paper presented at "Recent Developments in Understanding Chemical Movements in Soil" workshop at the Fertiliser Lime Research Centre, Massey University.

[6] Fert Research (1996). Draft Code of Practice for Fertiliser Use.

# 8. Methods of Implementation

## 8.1 Rules that apply throughout the Region, except the Manawatu catchment

All rules in this section of the Plan are based on rules adopted in the Manawatu Catchment Water Quality Regional Plan. Therefore, any activity in the Manawatu catchment covered by rules in the Manawatu Catchment Water Quality Regional Plan are not covered by DL Rules 1-5 of the Land and Water Regional Plan.

Any discharge of agricultural chemicals must be in accordance with the Regional Air Plan or a resource consent, other than agricultural chemicals applied using a vehicle mounted weed wiping device (DL Rule 17).

### DL Rule 1: Pit latrines

Any discharge of effluent into land from a pit latrine, except in the Manawatu catchment

is a **Permitted Activity** provided

a. the soil type does not comprise gravels, coarse/medium sands, scoria, fissured rock, or other such materials likely to permit free travel of excreta residues away from the vault chamber; and

b. the pit latrine is backfilled after use; and

c. the downward surface slope is less than 15°, or any change of downward surface slope greater than 15° is more than 5 metres from the pit latrine; and

d. waste in the pit latrine does not accumulate to a height closer than 300 mm of the original ground surface; and

e. the highest seasonal water table is at least 500 mm below the bottom of the pit latrine; and

f. the pit latrine is sited more than 20 metres from any water supply bore; and

g. the pit latrine is located more than 20 metres from a river, lake, wetland or artificial watercourse, where the distance to the nearest river or lake will be measured as follows:

   i. from the edge of the bank contiguous with the bed of the river or lake;

or, where there is no bank,

ii. for any river, from the limit of the bed covered by the annual fullest flow; or
iii. for any lake, from the limit of the bed covered by the annual highest water level.

**Advisory Note**
Care should be taken when establishing pit latrines that the hole is not too large. Larger pits will limit the breakdown of waste products.

**Explanation**
This rule applies to discharges from pit latrines (also known as long-drops or privies). These toilet systems are commonly used in remote locations, or as temporary facilities[7] where connection to a sewer is not possible. Permission may be required from the relevant district council. The words river, lake, wetland, and water are defined in the Act, and reproduced in the Glossary.

**DL Rule 2: On-site sewage discharges into land**

Any discharge into land of domestic sewage effluent, except in the Manawatu catchment

is a **Permitted Activity** provided

a. the design discharge to the treatment system is not more than 2000 litres per day (calculated according to the Tables in Appendix 3); and

b. there is no effluent run-off or seepage to the ground surface; and

c. there is no objectionable odour beyond the property boundary;

d. the discharge is at least 20 metres from any river, lake, natural wetland or artificial watercourse, where the distance to the nearest river or lake will be measured as follows:

i. from the edge of the bank contiguous with the bed of the river or lake; or
where there is no bank,
ii. for any river, from the limit of the bed covered by the annual fullest flow; or
iii. for any lake, from the limit of the bed covered by the annual highest water level; and

e. there is no direct discharge of any effluent to groundwater or surface water; and

f. where an on-site wastewater system (excluding a replacement system of the same or similar type) is installed on an allotment created since 1999:

[7] "temporary facilities" refers to events of short duration where pit latrines are required. For example, a 5 day show.

i. there is at least a 20 metre separation distance between the soakage field and any other on-site soakage field.

**Explanation**
This rule applies to the discharge **into land** of all forms of domestic sewage effluent, including from greywater treatment systems, septic tank systems, and aerobic systems.

The design of the domestic sewage effluent system, including the field soakage area, is not restricted by this rule. The design of any on-site sewage system is controlled by district councils under the Building Code ("G13.3.4 Where no sewer is available, an adequate on-site disposal system shall be provided for foul water ..."). Also, where a sewer connection is available, the drainage connection shall be made to the sewer (see G13.3.3 of the Building Code).

DL Rule 2 does not exempt on-site sewage disposal systems from compliance with provisions in a district plan or requirements imposed by a territorial authority under the Building Act or the Health Act. Compliance with the conditions in this rule means that the discharge from the system can proceed without the need for a resource consent from the Regional Council. The onus will be on the owner of the system to demonstrate that the conditions in this rule will be met.

The design discharge to the treatment system can be calculated from Tables in Appendix 3. These tables are from the New Zealand Manual of Alternative Wastewater Treatment and Disposal Systems, Volume II, Part A, *On-site Wastewater Disposal from Households and Institutions*. ARC Environment Technical Publication No. 58, second edition November 1994. Prepared by Ian Gunn, Auckland UniServices Ltd., University of Auckland.

Discharges to soak holes that penetrate groundwater are considered to be discharges that directly discharge to water and are not permitted under this rule.

The Council, in conjunction with the District Councils, has developed On-site Wastewater System Guidelines. These Guidelines are designed to help people who are considering having an on-site wastewater system installed, and for trades people who install them. The Guidelines explain how on-site wastewater systems work and what an individual's responsibilities are.

**DL Rule 3: On-site sewage discharges onto land**

Any discharge onto land of effluent from an aerobic sewage treatment system, except in the Manawatu catchment

is a **Permitted Activity** provided

a. the application rate is not greater than 5 mm/day; and

b. the maximum discharge does not exceed 2000 litres per day; and

c. the carbonaceous five day Biochemical Oxygen Demand concentration in the effluent from the system is not greater than 20 mg/litre; and

d. there is no objectionable odour at the property boundary; and

e. the discharge does not cause ponding on or runoff from the disposal site; and

f. the discharge is not by way of spray irrigation or otherwise produce any aerosol discharge to air; and

g. there is no direct discharge of any effluent to groundwater or surface water; and

h. the discharge is at least 20 metres from any river, lake, natural wetland or artificial watercourse, where the distance to the nearest river or lake will be measured as follows:

i. from the edge of the bank contiguous with the bed of the river or lake;

or, where there is no bank,

ii. for any river, from the limit of the bed covered by the annual fullest flow; or

iii. for any lake, from the limit of the bed covered by the annual highest water level.

**Explanation**

This rule applies to discharges of **aerobically** treated sewage **onto** land. This rule does not apply to discharges from septic tank systems, which are anaerobic.

The design of the aerobic sewage treatment system, including the field soakage area, is not restricted by this rule. The design of any on-site sewage system is controlled by district councils under the Building Code ("G13.3.4 Where no sewer is available, an adequate on-site disposal system shall be provided for foul water ..."). Also, where a sewer connection is available, the drainage connection shall be made to the sewer (see G13.3.3 of the Building Code).

DL Rule 3 does not exempt on-site sewage disposal systems from compliance with provisions in a district plan or requirements imposed by a territorial authority under the Building Act or the Health Act. Compliance with the conditions in this rule means that the discharge from the system can proceed without the need for a resource consent from the Regional Council. The onus will be on the owner of the system to demonstrate that the conditions in this rule will be met. Where the conditions cannot be met a resource consent will be required in accordance with DL Rule 18.

Condition f. requires that effluent is not spray irrigated onto land but applied by methods such as pressure dosing under bark chips. This is necessary to protect public health. Any system involving the discharge of human effluent by spray irrigation will require a resource consent in accordance with DL Rule 18. Spray irrigation may require an additional permit to discharge contaminants to air. Any discharge to air must be in accordance with the Regional Air Plan or a resource consent.

The Council also recognises the importance of working with district councils regarding septic tanks. Refer to DL Method 5.

**DL Rule 4: Discharges of agricultural effluent**

4.1 Any discharge onto or into land, except in the Manawatu catchment, of

a. wastewater and/or sludge from dairysheds, piggeries, or feedlots; or

b. sludge from agricultural wastewater treatment ponds; or

c. poultry farm litter or wastewater

is a **Controlled Activity**.

4.2 The activity shall comply with the following standards:

a. subject to clause 4.2.b, there shall be a buffer zone of at least 20 metres width between the disposal area and the coastal marine area, the nearest river, lake, natural wetland, artificial watercourse, public road, residence and neighbouring properties. The distance to the nearest river or lake will be measured as follows:

i. from the edge of the bank contiguous with the bed of the river or lake;

or, where there is no bank,

ii. for any river, from the limit of the bed covered by the annual fullest flow; or

iii. for any lake, from the limit of the bed covered by the annual highest water level; and

b. there shall be a buffer zone of at least 150 metres width between the disposal area of any piggery waste and the nearest residence, marae, public hall, church, school, or public recreation area; and

c. the rate of application shall be no greater than 150 kgN/hectare in any 12 month period and shall not exceed 50 kgN/hectare in any 24 hour period; and

d. there shall be no ponding of effluent on the soil surface or runoff of effluent to water, including any discharge of effluent to a subsurface drainage system; and

4.3 The Council will exercise control in relation to these activities over the following matters:

a. the method and rate of application; and

b. the distance of the discharge to the nearest river, lake, natural wetland, artificial watercourse, public road, neighbouring properties, residence, marae, public hall, church, school, and public recreation area; and

c. the periods and times the activity is undertaken.

4.4 The information required with discharge permit applications for this activity is set out in Section 34.2.1 of this Plan.

4.5 Subject to Section 94 (5) of the Act, the Council will consider consent applications for this activity without notification provided written approval has been obtained from every person who may be adversely affected by the activity.

**Advisory Note**
Any discharge of effluent onto land by way of spray irrigation must be in accordance with the Regional Air Plan or a resource consent.

**Explanation**
This rule applies the same standard for Nitrogen loadings (150 kgN/hectare/year) as is applied on the east side of the Tararua-Ruahine Ranges in the Manawatu catchment. Any application to discharge higher Nitrogen loadings is a Discretionary Activity in accordance with DL Rule 18, and will be assessed under DL Policy 3. Tables are included in Appendix 4 of this Plan to calculate land areas required for compliance with maximum nitrogen loading rates.

Using the values in these Tables, 150 kilograms of nitrogen per hectare per year equates to:

a. a land area requirement of 360 square metres per cow (that is, about one hectare per 30 cows); and

b. an annual effluent loading rate of 75 millimetres per year.[8]

[8] Appendix 4 sets out nitrogen loading rate calculations.

The terms river, lake and wetland, are defined in the Act and reproduced in the Glossary. A wetland does not include a constructed or artificial wetland. Where the standards in this rule cannot be met, a discharge permit will be required in accordance with DL Rule 18.

**DL Rule 5: Sewage sludge disposal**

5.1 Except as provided for in DL Rule 6, or within the Manawatu catchment, any discharge of sewage sludge onto or into land

is a **Discretionary Activity.**

5.2 The information required with consent applications for this activity is set out in section 34.2.2 of this Plan.

**Explanation**
This rule applies to the disposal of all sewage sludge, regardless of its degree of treatment. Sewage sludge can contain disease-causing organisms such as salmonella and giardia, and the eggs of parasites such as tapeworm, which can remain viable for a long time in the soil environment. Salmonella and giardia can be destroyed by heat treatment and composting, but parasite eggs have better survival rates during sludge treatment. An additional constraint on the use of sludge is the presence of heavy metals. This constraint becomes even more critical when there is a potential pathway from the sludge amended soil to the food chain. Sewage sludge is defined in the Glossary.

## 8.2 Rules that apply throughout the Region

The rules in this section apply to all discharges of contaminants to land, whether or not the discharge may enter water. These rules apply to discharges to land throughout the Region, including the Manawatu catchment.

**DL Rule 6: Discharge of persistent or harmful contaminants**

Any discharge onto or into land of:

a. wastewater sludge originating from timber treatment processes using copper-chromium-arsenic wood preservatives; or

b. perchlorethylene contaminated waste from dry cleaning operations; or

c. persistent organochlorine substances; or

d. poly-aromatic hydrocarbons

is a **Non-Complying Activity.**

**Explanation**
Timber treatment sludge and perchlorethylene have created contaminated sites in this Region and elsewhere in New Zealand. These substances can be disposed into specifically designed facilities. All of these facilities are outside this Region.

Persistent organochlorine wastes requiring treatment or destruction may arise from a variety of sources, including contaminated soils, sediments, building materials, chemical stockpiles, old gasworks sites and materials from treatment ponds and waste dumps. Persistent organochlorine wastes include dioxins, pentachlorophenol (PCP), chlordane, the chlorinated agricultural insecticides such as DDT and dieldrin, and polychlorinated biphenols (PCBs). The chemical stability of the organochlorine substances of concern, a feature contributing to their persistence in the environment, makes them difficult to destroy. Some of these chemicals, such as dioxins and certain poly-aromatic hydrocarbons, are carcinogenic.

**DL Rule 7: Application of fertiliser**

The discharge of fertiliser onto or into land

is a **Permitted Activity**.

Refer also to Section 8.3, DL Method 1; and Section 32.2, LM Method 1.

**Explanation**
This rule applies to fertilisers, as defined in the Glossary, which are applied to promote plant growth. This rule does not apply to the discharge of wastewater. Discharges of wastewater are addressed in DL Rules 4 and 12. Any discharge to air must be in accordance with the Regional Air Plan or a resource consent.

The potential adverse effect of most concern from fertiliser application is nitrate contamination of groundwater. Despite this potential adverse effect, compliance with this Rule is not subject to any conditions because the Council is not satisfied that regulating fertiliser use is the most effective way to avoid or mitigate the effects of the activity. Some improvement in groundwater quality should be achievable through controls imposed on other sources of nitrate, such as sewage and agricultural effluent, which are regulated to control the effects from organic and microbial contaminants. In areas where fertiliser application could cause adverse effects, the Council will provide people with information about more efficient and effective means of using fertiliser (refer to LM Method 1). In particular the Council will be encouraging adherence to relevant codes of practice, such as the Code of Practice for Fertiliser Use (1998) prepared by the New Zealand Fertiliser Manufacturers' Research Association.

The Council will carry out further investigations and monitoring to determine the contributing sources of nitrate contamination of groundwater in the Horowhenua. Information gained from these investigations will be used to

review this Rule within 5 years of this Plan becoming operative. If the provision of information about fertiliser use is not sufficient to avoid or mitigate the effects of the activity, a more regulatory approach as taken with other discharges may be necessary in the future.

**DL Rule 8: Discharge of Whey**

8.1 The discharge of whey onto or into land

is a **Controlled Activity.**

8.2 The activity shall comply with the following standards:

a. there are no more than four applications to any one area of a property in any twelve month period; and

b. the application rate does not exceed 150 kilograms of nitrogen/hectare/year onto or into the site; and

c. the minimum return period for discharging whey onto or into the site is 16 days; and

d. no whey is discharged onto or into land which receives dairy shed effluent; and

e. the discharge is not within:

i. 20 metres of water, and wetlands, excluding groundwater; or
ii. 100 metres of any existing potable water abstraction point; or
iii. 20 metres of any property boundary; or
iv. 100 metres of any residential dwelling, other than residential dwellings on the property; and

f. there shall be no ponding of whey on the soil surface or runoff of whey to water, including any discharge of whey to a subsurface drainage system.

8.3 The Council will exercise control in relation to these activities over the following matters:

a. the method and rate of application; and

b. the distance of the discharge to the nearest river, lake, natural wetland, artificial watercourse, public road, neighbouring properties, residence, marae, public hall, church, school, and public recreation area; and

c. the periods and time the activity is undertaken.

8.4 The information required for this activity is set out in Section 34.2.3 of this Plan.

8.5 Subject to Section 94(5) of the Act, the Council will consider consent applications for this activity without notification provided written approval has been obtained from every person who may be adversely affected by the activity.

**Advisory Note**
Any discharge to air must be in accordance with the Regional Air Plan or a resource consent.

**Explanation**
When whey is applied in low hydraulic doses, the dose rate is designed to replace the use of conventional fertilisers. When whey is applied in this way there are no adverse environmental effects.

**DL Rule 9: Offal Pits**

Any discharge of offal, animal carcasses and associated leachate, into or onto land

is a **Permitted Activity** provided

a. the pit contains only plant and animal products generated on that property; and

b. the pit is securely capped with soil or similar substance when no longer used; and

c. the pit is covered during its use to prevent scavenging by animals, birds or rodents; and

d. there is no leachate from the pit to groundwater or surface water; and

e. the pit is more than 20 metres from the coastal marine area; and

f. the pit is more than 20 metres from any water supply bore; and

g. the pit is more than 20 metres from a river, lake, wetland or artificial watercourse, where the distance to the nearest river or lake will be measured as follows:

i. from the edge of the bank contiguous with the bed of the river or lake;

or, where there is no bank,

ii. for any river, from the limit of the bed covered by the annual fullest flow; or

iii. for any lake, from the limit of the bed covered by the annual highest water level.

h. there is no objectionable odour beyond the property boundary.

**Advisory Note**
Care should be taken when developing offal pits to ensure pit sizes are not too large, nor too many in any one location, to ensure the breakdown of materials and to minimise scavenging impacts.

**Explanation**
This rule applies to discharges from offal pits, a common method of disposing of animal waste on farms. Any discharge to air must be in accordance with the Regional Air Plan or a resource consent.

Refer to the Regional Coastal Plan for provisions relating to the burial of dead marine mammals within the coastal marine area.

**DL Rule 10: Farm and domestic waste disposal areas**

Any discharge of contaminants into or onto land associated with farm or domestic

a. solid waste disposal; or

b. composting operations

is a **Permitted Activity** provided

a. the waste does not include animal carcasses, offal, or agricultural chemicals or hazardous wastes; and

b. any solid waste comprises only household or farm wastes generated on that property; and

c. composting operations involve only vegetable matter waste generated on that property; and

d. the disposal of agrichemical containers is allowed provided the container has been triple rinsed and cut open or crushed; and

e. the waste disposal area is more than 20 metres from any river, lake, wetland or artificial watercourse, where the distance to the nearest river or lake will be measured as follows:

i. from the edge of the bank contiguous with the bed of the river or lake;

or, where there is no bank,

ii. for any river, from the limit of the bed covered by the annual fullest flow; or

iii. for any lake, from the limit of the bed covered by the annual highest water level; and

f. there shall be no windblown litter from the site; and

g. there shall be no objectionable odour beyond the property boundary; and

h. the disposal area shall be sited away from floodable areas; and

i. the disposal area shall not be located within an urban area.

**Explanation**
This rule applies to on-site solid waste dumps and on-site domestic compost piles. On-site solid waste dumps are usually located in rural areas not serviced by refuse collection. On-site domestic composting operations are typically undertaken everywhere in the Region. Such activities are small-scale and do not create the odour and dust problems associated with industrial or municipal operations.

Triple rinsing containers ensures that residues of chemicals are minimal. The rinse water should be added to the final application mix so there is no disposal problem. Cutting or crushing containers is good practice to avoid taking up excessive space in landfills.

The term agricultural chemical is defined in the Glossary.

**DL Rule 11: Aerial application of sodium monofluoroacetate (1080)**

Any aerial discharge of sodium monofluoroacetate (1080) impregnated bait onto land

is a **Permitted Activity** provided

a. the average toxic load of the bait does not exceed 0.15 % weight for weight, where a single random sample contains the specified loading within a tolerance of not more than ± 25%, and the means of ten or more such samples lies within 5% of the specified loading; and

b. the maximum application rate of the bait is no more than 15 kilograms per hectare; and

c. there shall be no bait discharged onto the rooftop of any dwelling; and

d. permission has been obtained from affected landowners.

**Explanation**
Compliance with the conditions in this rule does not exempt any person from compliance with other statutory requirements. In particular, the Pesticides

(Vertebrate Pest Control) Regulations 1983 require that ***every aerial application*** of 1080 bait must have approval from the Medical Officer of Health (this role is continued under the Hazardous Substances and New Organisms Act); the pilot of any aircraft making the 1080 application must hold an appropriate chemical rating issued under the authority of the Civil Aviation Regulations; and only approved operators or persons operating under the supervision of approved operators can carry out treatment operations.

The Pesticides (Vertebrate Pest Control) Regulations 1983 are administered by the Ministry of Agriculture and Forestry. Relevant extracts from the regulations are reproduced in Appendix 5 of this Plan. The Hazardous Substances and New Organisms Act is administered by the Environmental Risk Management Agency. Existing regulations carried over from transitional provisions into equivalent provisions under the HSNO Act regulation framework.

Key requirements in the Vertebrate Pest Control Regulations relate to:

- packing, labelling, storing, and transportation of 1080; and
- the colour of the bait; and
- specification of the maximum and minimum time period during which the bait is toxic after application; and
- warning notices; and
- notification of police ; and
- public notification, including supplying the name and address of the person responsible for the application.

The Medical Officer of Health approving aerial applications will apply conditions to the approval that relate to:

- inspection of boundaries, roads and major waterways; and
- the keeping of logs with information about time, date, place, weather, flight paths, wind direction and amount dropped; and
- proximity of drops and method of application near camping grounds, public roads, picnic areas, lakes, and rivers; and
- flight paths over water supply catchments; and
- monitoring of water quality in water supply catchments; and
- the decontamination of aircraft leaving the operational area.

Sodium monofluoroacetate (1080) is a controlled pesticide subject to regulation by the Ministry of Agriculture and Forestry, with a requirement of authorisation for aerial application by Medical Officers of Health. These controls are necessary to protect people and non-target animals, such as dogs, from accidental poisoning. Application of the same controls by the Regional Council is not necessary to achieve the purpose of the Act. This rule has been adopted to reduce unnecessary regulation of an activity that is adequately and properly controlled by other agencies.

The loading tolerance specified in clause a. is taken from Appendix 9 of the Bovine Tuberculosis Possum Control Operations, A Protocol, produced by the Animal Health Board, October 1992.

**DL Rule 12: Solid waste disposal**

12.1 Except as provided for in DL Rule 6 any discharge of contaminants onto or into land associated with

a. the disposal of solid waste materials; or

b. composting organic material

including the disposal to a landfill, rubbish dump or tip, unless the discharge is specifically provided for and complies with all conditions of DL Rule 10

is a **Discretionary Activity.**

12.2 The information required with consent applications for these activities is set out in section 34.2.4 of this Plan.

**Explanation**
This rule applies to the operators of landfills that are not farm or domestic waste disposal areas. All existing landfills in the Region have permits to discharge waste to land as required by Section 418 of the Act. This rule applies to any new landfill established, any landfill extension and applications for existing sites when consents expire in the Region.

**DL Rule 13: Discharge of industrial wastewater, sewage or sewage effluent**

13.1 Except as provided for in DL Rule 6, any discharge onto or into land of

a. wastewater from tanneries, fellmongeries, dairy processing industries, food manufacturing industries, textile industries, timber industries, rendering plants, and meat processing plants; or

b. sewage or sewage effluent, unless the discharge is specifically provided for and complies with all conditions of DL Rules 1, 2 or 3

is a **Discretionary Activity**.

13.2 The information required with consent applications for these activities is set out in section 34.2.5 of this Plan.

**Explanation**
This rule applies to discharges of wastewater from specified industries. Discharges of agricultural wastewater are covered in DL Rule 4. Discharges of sewage sludge containing contaminants of human origin are covered in DL Rule 5.

**DL Rule 14: Discharge of stormwater to land**

The discharge of stormwater onto or into land

is a **Permitted Activity** provided

a. the discharge shall not include stormwater from any industrial or trade premise where hazardous substances are stored or used; and

b. the discharge shall not cause the flooding of any property, unless written approval is obtained from the affected property owner; and

c. the discharge shall not cause erosion of any land or the banks or bed of any waterbody beyond the point of discharge; and

d. where the discharge may enter water the discharge shall not increase receiving water temperature by more than 3˚C; and

e. where the discharge may enter water, none of the following effects shall arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminants (either by itself or in combination with the same, similar or other contaminants);

    i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
    ii. any conspicuous change in the colour of water[9]; or
    iii. any change in horizontal visibility greater than 30%[10]; or
    iv. the rendering of fresh water unsuitable for consumption by farm animals; and

f. where the discharge may enter water the discharge shall not be toxic[11] to aquatic ecosystems.

**Explanation**
This rule applies to the discharge of stormwater to land provided the discharge does not include stormwater from any industrial or trade premise

9 "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change in the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

10 Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

11 Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into a body of a fish, impair health or cause death by its specific chemical properties.

where hazardous substances are stored or used. The discharge of stormwater to water is provided for by DSW Rules 3 and 4.

Some urban stormwater drains are controlled by district councils. Restrictions imposed by district councils include bylaws restricting the discharge of contaminants **into** the drain. This rule does not override any restrictions required by district councils. The Regional Council only regulates what may **exit** the stormwater system.

**DL Rule 15: Discharges of stormwater to land deriving from industrial or trade premises**

15.1 Any discharge of stormwater onto or into land, that includes drainage from any industrial or trade premise where hazardous substances are stored or used

is a **Controlled Activity.**

15.2 The activity shall comply with the following standards:

a. the discharge shall not cause the flooding of any property, unless written approval is obtained from the affected property owner; and

b. the discharge shall not cause erosion of any land or any water course beyond the point of discharge; and

c. where the discharge may enter water, none of the following effects shall arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminants (either by itself or in combination with the same, similar or other contaminants);

i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
ii. any conspicuous change in the colour of water[12]; or
iii. any change in horizontal visibility greater than 30%[13]; or
iv. the rendering of fresh water unsuitable for consumption by farm animals; and

d. where the discharge may enter water the discharge shall not be toxic[14] to aquatic ecosystems.

[12] "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change in the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

[13] Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

15.3 The Council will exercise control over the following matters:

a. the concentration of contaminants in the discharge; and

b. the management of the stormwater system; and

c. conditions to ensure that the effects described in Section 107 of the Act (and set out in condition 15.2.c. above) do not arise in any receiving water; and

d. the size of the zone allowed for reasonable mixing.

15.4 Subject to Section 94 (5) of the Act, the Council will consider consent applications without notification or the need to obtain the written approval of any person.

15.5 The information required with consent applications for these activities is set out in section 34.2.6 of this Plan

**Explanation**
This Rule applies to discharges of stormwater to land that are contaminated by drainage from industrial or trade premises where hazardous substances are contained. The Regional Council has reserved its control over issues relating to the effects of the discharge on flooding, erosion, the concentration of contaminants in the discharge and the management of the stormwater system.

Some urban stormwater drains are controlled by district councils. Restrictions imposed by district councils include bylaws restricting the discharge of contaminants **into** the drain. This rule does not override any restrictions required by district councils. The Regional Council only regulates what may **exit** the stormwater system.

### DL Rule 16: Discharge of sediment, weed and other material extracted from waterways

Except as provided for by the Regional Plan for Beds of Rivers and Lakes and Associated Activities, any discharge of contaminants onto or into land associated with the removal of sediment, weed or other material from a natural or artificial watercourse,

is a **Permitted Activity** provided

a. the discharge shall not increase land instability or the risk of erosion; and

[14] Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into a body of a fish, impair health or cause death by its specific chemical properties.

b. the discharge shall not cross onto adjoining properties without the property owner's written permission; and

c. the discharge shall not cause any increase in the concentration of any hazardous substances or pathogenic organisms in the receiving water; and

d. none of the following effects shall arise in the receiving water, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants)

   i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
   ii. any conspicuous change in the colour of the water[15]; or
   iii. any change in horizontal visibility greater than 30%[16].

**Explanation**
DL Rule 16 applies to the discharge of sediment, weed or other material from a natural or artificial watercourse that may re-enter the watercourse. The disturbance of the bed of the river or lake is provided for in the Regional Plan for Beds of Rivers and Lakes and Associated Activities.

### DL Rule 17 – Application of Agricultural Chemicals

The discharge onto land of agricultural chemicals using vehicle-mounted devices for weed wiping

is a **Permitted Activity** provided

a. the application is undertaken in a manner that does not contravene any requirement specified in the agricultural chemical manufacturer's instructions; and

b. there is no direct discharge of agricultural chemicals to water; and

c. the application is undertaken in accordance with Part 5 of the NZS8409: 1999 Code of Practice for the Management of Agrichemicals; and

d. where the application is undertaken on public land, the person who will apply the agrichemicals has completed either the Growsafe Introductory Certificate, or the Growsafe Applied Certificate, or has completed a course providing an equivalent qualification.

[15] "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change on the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

[16] Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

**Explanation**
DL Rule 17 applies to the use of weed wipers for the application of agricultural chemicals onto land. DSW Rule 8 permits, subject to conditions, the discharge of herbicide to water. All other agrichemical applications are subject to the provisions of RAP Rules 14 and 15 in the Regional Air Plan.

Agricultural chemicals are defined in the Glossary to mean any substance, whether inorganic, human-made or naturally occurring, modified or in its original states, that is used in any agriculture, horticulture or related activity, to eradicate, modify or control flora and fauna. For the purposes of this Plan agricultural chemicals do not include animal remedies, fertilisers or pheromones or any substance that does not change the physical, chemical or biological condition of soil. Agrichemicals have the same meaning.

### DL Rule 18: Discharge of contaminants not otherwise provided for

18.1 Any discharge of contaminant onto or into land in circumstances that results in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water

a. that is not specifically provided for by any rule in this Plan; or

b. is specifically provided for but does not meet the conditions of any rule in this Plan; or

c. that is not specifically provided for by any rule in the Manawatu Catchment Water Quality Regional Plan

is a **Discretionary Activity.**

18.2 The information required with consent applications for these activities is set out in section 34.2.7 of this Plan.

**Explanation**
This rule applies to the discharge of any contaminants to land not provided for in any other regional rule for this Region. These discharges are specifically restricted under Section 15 (1)(b) of the Act. Any discharge to air must be in accordance with the Regional Air Plan or a resource consent.

## 8.3 Non-regulatory methods

### DL Method 1 - Land and Riparian Management Strategy

The Regional Council will implement, in association with District Councils and other relevant agencies and resource users, the Land and Riparian Management Strategy.

(Refer also to Chapter Six, LM Method 1).

**DL Method 2 - Contaminated sites**

The Regional Council will encourage and support district councils, through submitting on district plans, to use the Land Information Memorandum and Project Information Memorandum systems and other appropriate records to identify sites that are confirmed as contaminated or have a known historical association with potentially contaminating substances.

**DL Method 3 - Contaminated sites**

The Regional Council will develop, in conjunction with district councils and interested parties, a Contaminated Sites Protocol. The Contaminated Sites Protocol will identify how the Regional Council will address contaminated site issues and provide guidance for district councils. The Protocol will recognise and incorporate Ministry for the Environment guidelines.

**DL Method 4 - Septic tanks**

The Regional Council, through disseminating information, running workshops, funding research and submissions on District Plans and consent applications, will encourage and support district councils to consider the cumulative impacts of septic tanks when considering subdivision applications. The introduction of the On-site Wastewater System Guidelines will also assist council staff to help people install or upgrade wastewater systems.

**DL Method 5 - Safe disposal of domestic waste**

The Regional Council will encourage district councils to consider the safe disposal of domestic waste, including waste from motorhomes, and the use of alternative waste treatment and disposal techniques.

**DL Method 6 - Groundwater contamination**

The Regional Council will:

- investigate the sources of nitrate contamination in groundwater, in particular in the Horowhenua district;
- assess the potential contribution fertiliser use has in elevated nitrate levels;
- assess the effectiveness of providing information in reducing nitrate contamination in groundwater in the Region; and
- promote adherence to the Code of Practice for Fertiliser Use, developed by the New Zealand Fertiliser Manufacturers' Research Association (1998).

(Refer also to Section 36 of this Plan).

**DL Method 7 - Lake eutrophication**

The Regional Council will investigate the extent and causes of eutrophication of coastal dune lakes, including the significance of land uses within lake catchments such as discharges of effluent to land.

## 8.4 Reasons for adopting each of the regional rules

**DL Rules 1 to 3: pit latrines, on-site sewage discharges into and onto land**

DL Rules 1 to 3 have been adopted to implement DL Policies 1 and 3 of the Plan and avoid, as far as practicable, the release of harmful substances into the environment, particularly where those substances may enter water. The conditions are sufficient to avoid or mitigate any adverse effects on the environment and so it is not necessary for the Council to require resource consents for these systems.

On-site treatment and disposal of domestic sewage falls under the jurisdiction of both regional and territorial authorities. In relation to this activity, both authorities have responsibilities under the Resource Management Act; district councils have additional responsibilities under the Building Act and the Health Act. These rules have been adopted to avoid duplication of responsibilities, so that consents are required from the Regional Council only where adverse effects on water and air are likely.

Leachate from pit latrines may enter water and it is therefore appropriate for them to be provided for in the Plan. Pit latrines that are constructed so as to comply with the conditions in DL Rule 1 would not cause adverse effects on water quality. The conditions are consistent with established practices.

Discharges from household septic tanks **into** land will not have adverse effects on groundwater quality provided suitable treatment can take place in the field soakage area and in the soil immediately surrounding that area. Discharges from aerobic treatment systems **onto** land will not have adverse effects on public health provided the treatment system is properly maintained, that is, all pumps are working and sludge is removed as necessary.

The reasons for adopting each of the conditions for DL Rule 2 are as follows: Condition a. is necessary because large facilities such as schools, camping grounds or boarding houses, require site specific designs that need to be assessed through the resource consent process. Condition b. was adopted as part of the Council's duty under Section 17 of the Act and to ensure consistency with the Regional Air Plan. This condition is also necessary to ensure that systems are properly maintained and operated after installation. Condition d. ensures that there is an adequate buffer between soakage fields and watercourses where further treatment can take place.

Condition e. is necessary to protect water from contamination from nitrates and disease causing organisms. Condition f. is necessary to mitigate the potential cumulative effects of discharges from septic tanks. There are some

areas in the Region where groundwater has elevated nitrate levels. Estimates of nitrogen discharged from septic tanks vary from 34 kgN/tank/year to 45.9 kgN/tank/year (see Background Report). In systems where effluent is discharged more than 300 mm deep in the soil without any denitrification system, most of this nitrogen is likely to be transported straight to groundwater.

DL Rule 3 has been adopted because discharges from purpose designed aerobic wastewater treatment systems have little or no effect on the environment or public health provided the conditions in the rule are not breached. Many aerobic systems include irrigation of the final treated effluent **onto** land as part of the system. While there is increased potential for adverse effects on public health if these systems are not adequately managed, such effects can be mitigated by appropriate design and management.

**DL Rule 4: discharges of agricultural effluent**

DL Rule 4 has been adopted to address DL Issues 1, 2, and 3. The Council will grant applications to discharge agricultural wastewater to land provided the proposed activity does not breach the standards in this Rule.

This Plan must not be inconsistent with the Regional Policy Statement for Manawatu-Wanganui (Policy 13.1) which directs discharges of contaminants to land to be prevented where the discharge would have a significant effect on groundwater quality. Elevation of nitrate concentrations in groundwater above the guideline recommended by the World Health Organisation is a significant effect. This guideline is exceeded in the Horowhenua area, and possibly other areas as well. The potential scale and risk of groundwater nitrate contamination from discharges of agricultural waste to land has been assessed in national research. The nitrate loading limits in DL Rule 4 are based on this research. It is necessary to adopt a precautionary approach in the management of this resource because nitrate contamination of groundwater is very difficult to remedy.

In areas where the soil types are less permeable, groundwater has better protection but the risk of runoff to surface water is increased. Runoff from rural land has been identified nationally and regionally as causing adverse effects on surface water because it increases sediment and microbial concentrations in rivers during moderate to high flows.

DL Rule 4 promotes agricultural discharges to land rather than water by making them Controlled Activities. Resource consent applications for this activity can be processed as non-notified, with less associated consent processing costs, if the permission of neighbours is obtained.

Further, monitoring costs associated with land discharges are generally less than monitoring costs associated with discharges to water, and consents for discharges to land are generally granted for longer periods than consents to discharge to water. Guidance for the duration of resource consents is given in the Regional Policy Statement for Manawatu-Wanganui (Policy 34.1).

**DL Rule 5: sewage sludge disposal**

DL Rule 5 has been adopted to implement DL Policy 1 and address DL Issue 3. A principal constraint on the use of sewage sludge, assuming that disease-causing organisms have been destroyed, is the level of heavy metals.

Metals that are both toxic and bioaccumulating, such as arsenic, cadmium, lead and mercury, present serious health risks to the environment. Increased concentrations in soil and vegetation may lead to their increased uptake and bioaccumulation in grazing animals (cows consume about 800 kg of soil per year). Disposal of sewage sludge therefore requires site specific, and activity specific assessment.

**DL Rule 6: discharge of persistent or harmful contaminants**

This rule is necessary to address DL Issue 3 and to ensure that the soil resources of the Region are sustained to meet the reasonably foreseeable needs of future generations. Prohibiting the discharge of these contaminants will help avoid the development of additional contaminated sites in the Region. The contaminants restricted under this rule can be adequately disposed of at appropriate facilities outside the Region.

Internationally the most widely employed means to destroy organochlorine chemicals and contaminated materials is High Temperature Incineration (HTI). After vigorous opposition to the proposed use of a cement kiln to destroy stocks of PCBs, New Zealand has exported its major holdings of PCBs for destruction in a dedicated hazardous waste HTI facility overseas, principally in France.

The search for alternative means to destroy organochlorine substances safely, particularly PCBs, has involved considerable research and development world-wide. To help identify destruction technologies appropriate to PCP and dioxin contaminated material, the Ministry for the Environment and the Timber Industry Environmental Council contracted overseas consultants to report on all proven or potential technologies. Only three technologies were identified for solid wastes. These are High Temperature Incineration (HTI); Base Catalysed Dechlorination (BCD); and the EcoLogic process. These technological processes are described in the Background Report to this Plan.

**DL Rule 7: application of fertiliser**

This rule is necessary to implement DL Policy 1.a. There is no condition in this rule to restrict the Nitrogen loading to any particular rate. Unlike the application of wastewater containing nitrogen, the application of fertiliser to pasture and crops is undertaken specifically to promote plant growth. Over-application of crop fertiliser would represent a cost to the grower. The person applying the fertiliser therefore has an economic incentive to apply only the amount required for plant growth.

Contamination of surface water and groundwater has been identified as an issue in the Region. While fertiliser applications can contribute to this contamination, the Council is not satisfied that regulation is the most effective way to avoid or mitigate the potential adverse effects of the activity. The issue of over-application of fertiliser to any land, including pastoral and horticultural land, is more likely to be better addressed by providing information.

Providing information and education alone relies on individuals recognising they can increase their net benefit by using the information. Avoiding or decreasing nitrate losses to groundwater by more effective fertiliser application allows a net benefit to accrue to the farmer. This is because the application of fertiliser in amounts not necessary for plant growth, or at times when plant uptake is low, is a financial cost to the farmer. The provision of information should therefore modify that person's behaviour more effectively than regulation.

The Council recognises that the permissive approach taken in this rule needs to be accompanied by effective non-regulatory methods if the issue of nitrate contamination of groundwater is to be addressed (refer to DL Method 6). The Council will actively promote the adherence to the Code of Practice for Fertiliser Use developed by the New Zealand Fertiliser Manufacturers' Research Association.

The effectiveness of this Rule will be reviewed within 5 years of this Plan becoming operative. If existing controls and the provision of information are not sufficient to reverse the trend of degraded groundwater then the regulation of fertiliser may be necessary in the future.

**DL Rule 8: discharge of whey**

DL Rule 8 is necessary to control the application of whey to land. Whey has a minor effect on the soil resource when discharged according to the specified performance conditions. Controlling the application of whey in the Plan promotes the wise use of resources in the Manawatu-Wanganui Region. The application of whey to soils supplies nutrients that would otherwise have been applied.

**DL Rules 9 and 10: offal pits, and farm and domestic waste disposal areas**

These rules are necessary to implement DL Policy 1.a. Offal pits and farm dumps are a necessary 'activity' on many agricultural farms. Nevertheless they have the potential to cause adverse effects, including effects of objectionable odour, contamination of groundwater, and the spread of disease. The conditions adopted for offal pits are the same as those required for pit latrines. The conditions adopted for farm dumps are consistent with the potential effects.

**DL Rule 11: aerial application of sodium monofluoroacetate (1080)**

This rule is necessary to implement DL Policy 1.a. Sodium monofluoroacetate (1080) is a controlled pesticide subject to regulation by the Ministry of

Agriculture and Forestry, and authorisation for aerial application by Medical Officers of Health. These controls are necessary to protect people and non-target animals, such as dogs, from accidental poisoning. Application of the same controls by the Regional Council is not necessary to achieve the purpose of the Act. This rule has been adopted to reduce unnecessary regulation of an activity that is adequately and properly controlled by other agencies.

**DL Rules 12 and 13: solid waste disposal, and discharge of industrial wastewater, sewage or sewage effluent**

This rule is necessary to implement DL Policy 1.b and address DL Issues 1, 2, and 3. Discharges of solid and liquid waste to land can adversely affect groundwater quality, surface water quality, soil quality, and air quality. These adverse effects, which will be highly site specific, will need to be avoided, remedied or mitigated in accordance with the policy guidance provided in this Plan.

**DL Rule 14: discharges of stormwater to land**

This rule is necessary to implement DSW Policy 1.a. The Regional Council is satisfied that by restricting the rule to the discharge of stormwater to land which does not include stormwater discharges from any industrial or trade premise where hazardous substances are stored or used then there will be no adverse effects. The provisions of the DSW Chapter provide for stormwater discharges to water.

**DL Rule 15: discharges of stormwater to land deriving from industrial or trade premises**

This rule is necessary to implement DL Policy 1 b. Providing for stormwater discharges as a Controlled Activity provides the least regulatory solution, while ensuring that the Regional Council is fulfilling its duties under the Act.

**DL Rule 16: discharge of sediment, weed and other material extracted from waterways**

This rule is necessary to implement DL Policy 1.a. DL Rule 16 has been adopted to allow for the discharge of sediment, weed and other material to land where the potential effects of concern can be adequately dealt with by meeting the specified performance conditions.

**DL Rule 17: application of agricultural chemicals**

DL Rule 17 has been adopted to implement DL Policy 1. The conditions for this rule are necessary to avoid discharge of agrichemicals in a manner that is noxious, dangerous, offensive or objectionable to the extent that it has or is likely to have an adverse effect on the environment.

**DL Rule 18: discharges of contaminants not otherwise provided for**

This rule is necessary to implement DL Policy 1.b. Consistent with Section 15 of the Act, this rule restricts activities that do not comply with the conditions in the relevant rules, and any other discharge that may enter water that is not expressly provided for by a rule in the Plan.

## 8.5 Reasons for adopting the non-regulatory methods

**DL Method 1 - Land and Riparian Management Strategy**

DL Method 1 recognises the Council's intention to implement non-regulatory strategies to address concerns relating to sustainable land and riparian management practices. The Council considers strategies are more effective where:

- community ownership and buy-in is vital for success;
- non-point source impacts on the environment make specification of property rights impractical; and
- cause and effect relationships are not clear.

The Council is satisfied that the use of non-regulatory methods is a more effective and efficient way to address some issues relating to land management. In particular, the provision of information about the appropriate methods to avoid or mitigate the adverse effects of fertiliser use.

(Refer also to Chapter Six, Land Management).

**DL Methods 2 and 3 - Contaminated sites**

District councils have a role to ensure any land known to be contaminated or that has a known historical association with potentially contaminating substances is not used or developed in a way that will create an environmental or human health risk for the community. The Council believes that where activities have occurred on a site which may have resulted in that land becoming contaminated, and a change in land use is proposed, an investigation into the site is triggered through the use of Land Information Memorandums (LIM) and Project Information Memorandums (PIM). For example, a gas works on a contaminated site may not result in adverse effects. However, if the land use on that site was changed to a school or residential activity then there may be significant adverse effects.

The Regional Council is satisfied that the use of PIMs and LIMs will assist district councils when assessing whether future uses of land are appropriate.

DL Method 3 directs the Regional Council to develop a Contaminated Sites Protocol. This Protocol is necessary to clarify the Council's commitments to investigating and managing contaminated sites in a consistent manner throughout the Region. The Protocol will recognise that the responsibilities for

managing contaminated sites are spread over several agencies, each with varying objectives.

**DL Method 4 - Septic tanks**

Council is concerned with nitrate levels in the Horowhenua area. This method will ensure that the cumulative impacts of septic tanks, rather than just individual applications, will be taken into account by district councils. The Council is investigating the future transfer of septic tank functions to district councils. This is in keeping with their other Building Act requirements. The On-site Wastewater System Guidelines explain how to evaluate the most suitable wastewater system for property conditions, and covers site assessment, legal requirements, installation and maintenance.

**DL Method 5 - Safe disposal of domestic waste**

Council encourages the safe disposal of domestic waste such as from septic tanks and motorhomes. The Council is investigating the future transfer of septic tank functions to district councils. This is in keeping with their other Building Act requirements.

**DL Method 6 - Groundwater contamination**

DL Method 6 directs Council to investigate where groundwater contamination is caused by fertiliser application. This method will assist the Regional Council in evaluating the effectiveness of the Plan. Refer also to Section 36 of this Plan.

**DL Method 7 - Lake eutrophication**

DL Method 7 directs the Regional Council to investigate the extent and causes of eutrophication of coastal dune lakes. The results of this investigation will signal whether discharges to land are a problem in coastal lake catchments, because:

- these lakes appear to be nitrate limited;
- many lakes are fed by groundwater during the summer; and
- nitrate is potentially highly mobile from catchment land to the lakes via groundwater.

## 9. Environmental Results Anticipated

The following environmental results are anticipated from the implementation of the policies in this Chapter:

a. Overall nitrate levels in shallow groundwater throughout the Region, including Horowhenua, will decrease and all levels will be less than 11.3 $gN/m^3$ (the maximum nitrate-nitrogen concentration allowed as the New Zealand drinking water standard); and levels of other nutrient and microbial contamination will also be reduced.

b. Nutrient enrichment of the coastal dune lakes will be reduced.

c. No new land in the Region will be made permanently contaminated from copper-chromium-arsenic wood preservatives, perchlorethylene, organochlorine substances or aromatic hydrocarbons.

# CHAPTER THREE
# DISCHARGES TO SURFACE WATER

## 10. Scope of this Chapter

Chapter Three contains the regulatory framework for discharges of contaminants, or water, into water. These discharges are restricted by Section 15(1)(a) of the Act. Activities specifically provided for are:

- the discharge of any contaminant or water into water. This includes direct discharges to all surface water, including rivers, lakes, wetlands, artificial watercourses, and direct discharges to groundwater.

Activities **not** provided for in this Chapter are:

- discharges to water in the coastal marine area (these are controlled by provisions in the Regional Coastal Plan);
- discharges to water in the Manawatu catchment (these are controlled by provisions in the Manawatu Catchment Water Quality Regional Plan); and
- discharges to land that may enter water. That is, those restricted by Section 15(1)(b) of the Act (these are controlled by provisions in Chapter Two of the Plan).

There are two National Water Conservation Orders with effect in this Region. These are for the Manganui o te Ao River and the Rangitikei River. National Water Conservation Orders have a status greater than regional rules. They impose restrictions on the Council's powers as they relate to water and they can only be changed or revoked by the Minister for the Environment. These Orders are reproduced in Appendix 1.

## 11. Issues

The sources of contaminants discharged to water in this Region, and their potential and actual effects, are described in the Background Report to this Plan. In accordance with these effects, and with issues identified in the Regional Policy Statement for Manawatu-Wanganui, the Council identified four issues to be addressed in this Plan.

**DSW Issue 1 - Degradation of surface water quality and aquatic ecosystems**

The Region has a wide range of river types with varying degrees of water quality. Those rivers affected by natural sediment include the lower/tidal reaches of major rivers (the Manawatu and Whanganui Rivers), and the east

coast rivers (Akitio and Owahanga). The river most affected by volcanic activity is the Whangaehu River.

Horizontal visibility levels in the Whanganui River below Kaiwhaiki are typically less than half a metre. Visibility is worst at high flows but can also be poor at low flows. This is caused by fine sediment washed into the river rather than by any direct discharges of contaminants. Poor water quality in the main-stem of the Whangaehu River occurs mainly in summer and autumn and is caused by overflow of Ruapehu's crater lake during snowmelt. Water quality can be good in the main-stem at other times.

The frequent poor water quality in these rivers does not absolve the Council from its responsibility to manage the effects of direct discharges to these rivers. The minimum standards of Section 107 of the Act apply regardless of flow and regardless of existing quality.

**DSW Issue 2 - Potential degradation of existing high water quality**

Some rivers in the Region, such as the Rangitikei River, have very good water quality at low flows. Likewise, water quality in most headwaters is high even during moderate to high flows. Community expectation is that it remains high.

In some instances existing water quality in some rivers is already above contact recreation standards. In these instances a reduction in water quality to contact recreation standards may not be acceptable to the community.

**DSW Issue 3 - Eutrophication of the coastal dune lakes**

There are very few inland lakes in the Region. There are more than 45 named coastal dune lakes. The coastal dune lakes are naturally vulnerable to accelerated eutrophication because they are small, shallow and poorly flushed. Shallow lakes are ideal for algal and weed growth (if sufficient nutrients become available) because of the good light conditions and higher temperatures. The small size and flushing capacity of these lakes mean that particulate and dissolved nutrients washed into the lakes from the surrounding catchments will build up in the lake. All these factors make the coastal dune lakes particularly sensitive to direct and indirect discharges within their catchments.

Only one of the dune lakes receives a direct discharge. This is a discharge of stormwater to Lake Horowhenua. Any additional direct discharges to any of the lakes could cause long-term degradation. (Refer also Chapter Two, DL Issue 2).

**DSW Issue 4 - Adverse effects on the mauri of waterbodies**

Mauri can be described as the essential essence of all being. All things, both animate and inanimate, have been imbued with the mauri generated within the realm of te kore. The mauri represents the interconnectedness of all

things that have being. Inappropriate use of resources, such as the discharge of sewage to water, impacts directly on the mauri of that waterbody, and affects all factors associated with it. The natural balance that exists amongst all things is disturbed and in many cases irreversibly damaged.

# 12. Objectives

### DSW Objective 1 Surface Water Quality

To maintain or enhance water quality in rivers to standards at least suitable for contact recreation at flows less than half-median, wherever practicable.

### DSW Objective 2 Maintaining Surface Water Quality

To maintain water quality in those rivers that have existing high water quality.

### DSW Objective 3 Eutrophication

To avoid accelerated eutrophication and sedimentation of lakes in the Region, in particular coastal dune lakes.

(Refer also to Chapter Two, DL Objective 3.)

### DSW Objective 4 Ecological Values

Where appropriate, to maintain, enhance or safeguard the existing life-supporting capacity, natural character, ecological, intrinsic, cultural and amenity values of lakes, rivers and wetlands.

# 13. Policies

## 13.1 Policies

The Council has adopted five policies to manage discharges to water in parts of this Region that are outside the Manawatu catchment. These policies address the issues identified in Section 11 above. They are implemented by methods given in Sections 14.1, 14.2 and 14.3, and provide guidance for the assessment of resource consent applications. The policies are explained in detail in Section 13.2. The reasons for adopting these policies, in terms of Section 32 of the Act, are given in Section 13.3.

**DSW Policy 1: Use of regional rules**

To manage discharges of contaminants and water to water by adopting regional rules that:

a. permit all activities that have minor effects on the receiving environment provided specified conditions are met; and

b. regulate those activities that have the potential to cause any adverse effect on the receiving environment that is more than minor, and where conditions to manage the activity need to be site-specific; and

c. prohibit any activities that have an adverse effect on the receiving environment and/or human health that cannot be adequately avoided, remedied or mitigated; and

d. contain measurable and enforceable conditions, standards and terms so that the community can undertake their activities with certainty; and

e. are not inconsistent with National Water Conservation Orders.

**DSW Policy 2: Matters to be considered for resource consent applications**

The Council will have particular regard to the following matters when considering resource consent applications for discharges to surface water:

a. the effects of the discharge on:

   i. water quality;
   ii. aquatic ecosystems, including wetlands;
   iii. lake eutrophication;
   iv. human health and amenity values;
   v. any specified value associated with any feature of regional significance identified in Policies 8.1 and 8.3 of the Regional Policy Statement for Manawatu-Wanganui; and
   vi. natural character; and

b. the nature of the discharge with regard to tangata whenua concerns, and the effect of the discharge on mahinga kai, waahi tapu and other resources or places of significance to tangata whenua; and

c. the proposed discharge rate of

   i. biochemical oxygen demand;
   ii. suspended sediments;
   iii. particulate organic matter;
   iv. bacterial and other micro-biological contaminants;
   v. dissolved reactive phosphorus and dissolved nitrogen;

vi. ammonia; and
vii. toxic contaminants

and the effect of these discharge rates on the existing water quality; and

d. the presence of any non-biological or persistent contaminant in the discharge, and whether the contaminant is likely to accumulate in river or lake environments; and

e. whether any of the following effects are likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):

i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
ii. any conspicuous change in the colour or visual clarity;
iii. any emission of objectionable odour;
iv. the rendering of fresh water unsuitable for consumption by farm animals; and
v. any discharge shall not be toxic[17] to aquatic ecosystems ; and

f. whether the discharge will cause any water in a river to be unsuitable for contact recreation at flows less than half-median; and

g. contingency measures available, such as storage ponds or land disposal options, to avoid the need to discharge during periods of low flow; and

h. the outcome of consultation between the applicant and affected parties; and

i. the social and economic well being and the health and safety of people and communities; and

j. the activity is not inconsistent with National Water Conservation Orders.

**DSW Policy 3: Maintaining features and characteristics of the Hautapu River, Makuri River and the Mangatainoka River**

To ensure that any discharge of contaminants or water to water in the

a. Hautapu River and its tributaries above the confluence with the Oraukura Stream does not significantly diminish the fisheries habitat of any part of those rivers; and

[17] Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into the body of a fish, impair health or cause death by its specific chemical properties.

b. Makuri River from its source to its confluence with the Tiraumea River and its tributaries, including the Makuri-iti River, does not significantly diminish the scenic characteristics or the recreational, fisheries and wildlife habitat of any part of those rivers; and

c. Mangatainoka River from its source to its confluence with the Tiraumea River and its tributaries, including the Makakahi River does not significantly diminish the fisheries habitat of any part of those rivers.

**DSW Policy 4: Distances allowed for reasonable mixing**

To require compliance with any water quality conditions specified in a discharge permit within a distance downstream of the discharge which is either:

a. in the absence of special features or circumstances relevant to the site, the least of:

   i. the distance that equals seven times the width of the river when the flow is at half the median flow; or

   ii. 200 metres from the point of discharge or, for discharges to artificial watercourses including farm drainage canals, 200 metres from the point of discharge or the property boundary, whichever distance is the greater; or

   iii. the point at which mixing of the particular contaminant concerned has occurred across the full width of the body of water in the river; or

b. in the presence of special features or circumstances relevant to the site, a distance determined as reasonable for the specific receiving environment.

**DSW Policy 5: High value rivers**

To ensure discharges of contaminants to water do not compromise the high values identified in the National Water Conservation Orders for the Manganui o te Ao River and the Rangitikei River.

## 13.2 Explanation of policies

These policies establish the regulatory and non-regulatory framework to avoid or mitigate adverse effects caused by discharging contaminants or water to water throughout the Region, except in the Manawatu catchment.

DSW Policy 1 provides direction to adopt an effects-based approach, required for the adoption of regional rules by Section 68 (3) of the Act. This policy also recognises the importance of other statutory mechanisms that apply to some rivers in the Region.

DSW Policy 2 provides guidance on matters to which the Council will have particular regard when assessing any resource consent application to undertake an activity restricted by a rule in this Plan. These matters will be considered where the Council has the discretion to grant or refuse an application. This policy is consistent with the requirements of Section 104 of the Act, and policies in the Regional Policy Statement for Manawatu-Wanganui.

DSW Policy 3 provides guidance for the assessment of consents to discharge into rivers previously managed under the Local Water Conservation Notice for the Hautapu River. The provisions of this Notice are reproduced in Appendix 1. Local Water Conservation Notices have the status of regional rules and can be replaced by new instruments in regional plans in accordance with the First Schedule process.

The Manawatu Catchment Water Quality Regional Plan includes water quality standards for fishery purposes. The Land and Water Regional Plan includes provisions for the other values specified in the Local Water Conservation Notices, such as scenic and recreational values.

DSW Policy 4 has been adopted to provide certainty to applicants. There is a common misconception that mixing is only "reasonable" once it is complete. There is, however, nothing in the legislation or the case law to support this notion. The decision of *Mahuta and others* vs *National Water and Soil Conservation Authority* (5 NZTPA 73) states the general principle that the non-compliance zone should be as small as possible: "...we hold that it is the intention of the [Water and Soil Conservation] Act that mixing shall occur as quickly as possible in order that the intention of maintaining the classified standard is not frustrated ...". This policy follows the intent of this decision while providing clear guidance to applicants and the consent procedure.

The provisions of this policy are intended to apply on a case by case basis, having regard to the issues in each particular case. Application of this policy may vary where there is good reason to do so; however, it is intended that the emphasis should be on how much mixing distance would be **reasonable**. For example, a situation where this policy may not apply could include a particularly sensitive receiving environment where it may not be reasonable to allow any non-compliance zone.

DSW Policy 5 provides guidance for the assessment of consents to discharge into rivers that are protected under the National Water Conservation Orders in this Region. The two National Water Conservation Orders in this Region are on the Manganui o te Ao and Rangitikei Rivers. The values of the Manganui o te Ao River include its outstanding wild and scenic characteristics; an outstanding wildlife habitat for the blue duck or whio (Hymenolaimus malacorhynchos); and its outstanding recreational fishery. The values of the

Rangitikei River include, in the upper river, its outstanding wild and scenic characteristics and recreational, fisheries and wildlife habitat features; and in the middle river, the outstanding scenic characteristics and the recreational and fisheries features. The National Water Conservation Orders are reproduced in Appendix 1.

## 13.3 Reasons for adopting the objectives and policies

DSW Objectives 1, 2, 3 and 4 have been adopted to address the issues associated with discharges to water in this Region. In adopting these objectives, the Council is recognising and providing for the relationship of Maori and their culture and traditions with water and other taonga (Section 6 of the Act). The Council has also had particular regard to the maintenance and enhancement of amenity values and the quality of the environment, and the intrinsic value of ecosystems (Section 7 of the Act).

Using contact recreation as a standard in DSW Objective 1 is consistent with the provisions of the Regional Policy Statement (Policy 11.1). DSW Objective 2 maintains as a minimum, water quality that is suitable for contact recreation. Some rivers may have water quality that is higher than the standard for contact recreation. The approach taken by the Council to maintain water quality at the contact recreation standard is so the water is available for a range of uses in the future.

The intention of DSW Objective 2 is that these rivers be maintained at the higher standard. Those rivers of particular relevance to DSW Objective 3 are the Rangitikei, Hautapu, and Manganui o te Ao rivers and headwater streams in forest parks and national parks.

DSW Objective 4 acknowledges the ecological aspect of water quality management where factors are different to those required for contact recreation. The Regional Policy Statement provides for maintaining and enhancing surface water quality in Objective 11; maintaining or enhancing flows at levels that safeguard existing life supporting capacity in Objective 12; and the preservation of natural character and protection of specified values in Objective 15. These Regional Policy Statement provisions and the provisions of the Resource Management Act are relevant when assessing resource consent applications under DSW Objective 4.

DSW Policy 1 has been adopted to ensure that surface water discharges are managed according to the level of adverse effect they may have on the environment. The statutory mechanisms of Water Conservation Orders must also be provided for to ensure that this Plan is not inconsistent with those provisions.

DSW Policy 2 has been adopted to address DSW Issues 1, 2, and 3, and to assist the Council in achieving its function of controlling the discharge of contaminants into water. This Plan must provide effective guidance for assessing resource consent applications. The matters included in this Policy are consistent with the matters in Section 104 of the Act, specific issues of concern for discharges to water in this Region outside the Manawatu

catchment, and policies in the Regional Policy Statement for Manawatu-Wanganui.

DSW Policy 3 is necessary to ensure that the features protected by provisions in the Local Water Conservation Notice for the Hautapu River have a similar level of protection in this Plan. Local Water Conservation Notices have the status of regional rules and can be replaced by new instruments in regional plans in accordance with the First Schedule process.

DSW Policy 4 is necessary to provide certainty to users of water resources in the catchment. If this policy was not adopted, resource consent applications would be assessed without predictable, effective and consistent guidance.

DSW Policy 5 has been adopted to address DSW Issue 2 and DSW Objective 3. DSW Policy 5 is necessary to ensure that the values specified in the National Water Conservation Orders in this Region are protected from inappropriate discharges of contaminants.

# 14. Methods of Implementation

## 14.1 Rules that apply throughout the Region, except the Manawatu catchment

Rules in this section of the Plan are based on rules adopted in the Manawatu Catchment Water Quality Regional Plan. Therefore any activity in the Manawatu catchment covered by rules in the Manawatu Catchment Water Quality Regional Plan are not covered by DSW Rules 1-7 of the Land and Water Regional Plan.

### DSW Rule 1: Discharges of untreated effluent

Any discharge to surface water of

a. untreated human sewage; or

b. untreated agricultural waste from dairysheds, piggeries, poultry farms and feedlots

is a **Prohibited Activity** except for

i. within the section of the Whanganui River between NZMS R22: 848-380 and NZMS R22: 858-392 until 1st July 2009 (refer Map 3); or

ii. stormwater that is contaminated with sewage as a result of infiltration occurring during extreme rainfall events; or

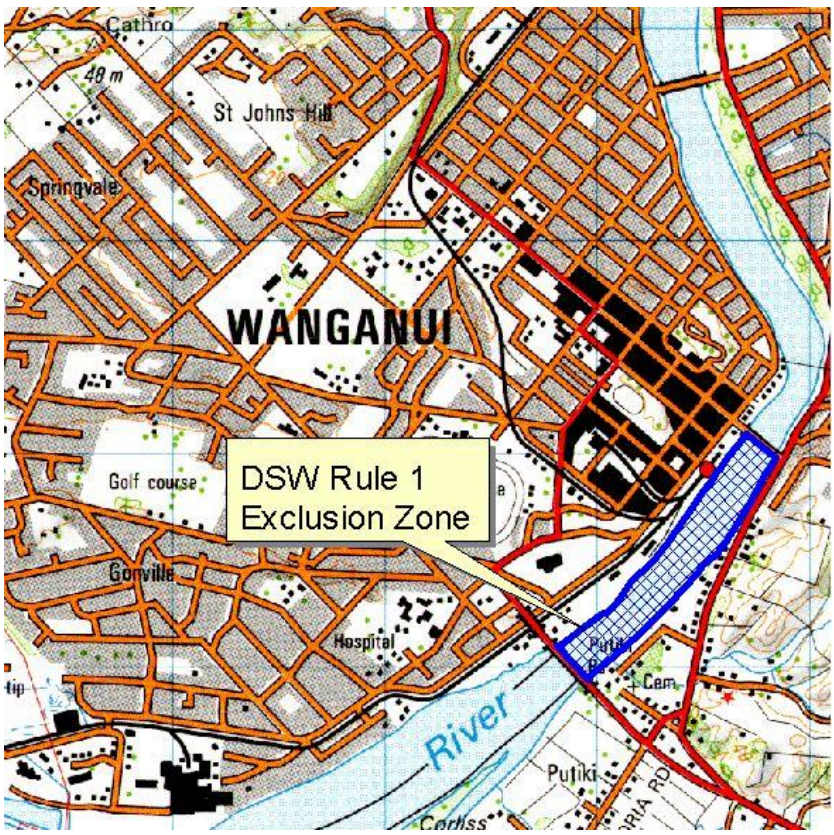
iii. in the Manawatu catchment.

**Explanation**

DSW Rule 1 does not apply to direct input of excreta from stock. For the purposes of this Plan, untreated human sewage, and untreated agricultural waste have been defined in the Glossary. The discharge of leachate from silage is also provided for under DSW Rule 1. DSW Rule 1 does not apply to the section of the Whanganui River upstream of Cobham Bridge between NZMS R22: 848-380 and NZMS R22: 858-392 until 1st July 2009. Discharges of stormwater are provided for by DSW Rules 3 and 4. Condition ii above, while obviously undesirable, recognises the fact that in extreme events some sewage may infiltrate stormwater systems. The Regional Council expects Local Authorities to take all possible precautions to prevent this from happening. The Manawatu catchment is subject to an equivalent rule in the Manawatu Catchment Water Quality Regional Plan.

The discharge of stormwater contaminated with sewage as a result of infiltration occurring during extreme rainfall events is considered a discretionary activity under DSW Rule 6.

**Map 3: Wanganui Exclusion Zone**



**DSW Rule 2: Discharges to lakes and natural wetlands**[18]

2.1 Except for discharges into Lake Otamangakau, Lake Te Whaiau, and Lake Moawhango and except as provided for by DSW Rules 3, 4 and 5 and except within the Manawatu catchment, any direct discharge of a contaminant, except for the discharge of herbicides for the purpose of controlling aquatic plant pests, to a lake or natural wetland

is a **Non-Complying Activity**.

2.2 The information required with consent applications for these activities is set out in section 34.2.8 of this Plan.

**Advisory Note**
A discharge is considered to be 'direct' when the point of discharge is into the lake or wetland itself. Where a stream or drain is used as an intermediary the discharge is not considered to be direct provided the discharge point is greater than 100 metres from the lake or natural wetland. Discharges to land adjacent to lakes or natural wetlands are not considered to be direct and are provided for in the Discharge to Land Chapter of this Plan.

**Explanation**
This Rule applies to all discharges to lakes and natural wetlands, except discharges of stormwater (refer to DSW Rule 3). This Rule does not apply to constructed or artificial wetlands, which are covered by DSW Rule 6 below. The discharge of water to water is provided for in DSW Rule 5.

**DSW Rule 3: Discharges of stormwater to water**

Subject to DSW Rule 1, any discharge of stormwater to water, except in the Manawatu catchment

is a **Permitted Activity** provided

a. the discharge does not include stormwater from any industrial or trade premise where hazardous substances are stored or used unless:

   i. those hazardous substances cannot enter the stormwater system; or
   ii. there is an interceptor system in place and maintained to collect hazardous contaminants or divert contaminated stormwater to a trade waste system; and

b. the discharge does not increase receiving water temperature by more than 3° C; and

[18] Wetlands, as defined in the glossary, "includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions. For the purpose of this Plan, it does not include wetlands designed for contaminant treatment.

c. the discharge does not cause erosion of the banks or bed of the waterbody; and

d. none of the following effects shall arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):

   i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
   ii. any conspicuous change in the colour of water[19]; or
   iii. any change in horizontal visibility greater than 30%[20]; and

e. any discharge shall not be toxic[21] to aquatic ecosystems.

**Explanation**
This rule applies to discharges of stormwater, including stormwater from rural drains. Some urban stormwater drains are controlled by district councils. Restrictions imposed by district councils include bylaws restricting the discharge of contaminants **into** the drain. This rule does not override any restrictions required by district councils. The Regional Council regulates what may **exit** the drain and enter into surface water. Drains that contain drainage from industrial or trade premises where hazardous substances are stored or used are provided for in DSW Rule 4. Any discharge of stormwater to water from an industrial or trade premise is a permitted activity provided it meets all of the performance conditions in DSW Rule 3.

This rule does not exempt owners of stormwater drains from compliance with the provisions of Sections 13 and 14 of the Act. That is, any diversion, or structures in the bed of a river or lake must comply with the relevant rules in the Regional Plan for Beds of Rivers and Lakes and Associated Activities, or SW Rules 8 or 9 in this Plan.

The discharge of water to water is provided for in DSW Rule 5.

### DSW Rule 4: Discharges of stormwater to water deriving from industrial or trade premises

4.1 Except within the Manawatu catchment, any discharge of stormwater to water that cannot meet performance condition a of DSW Rule 3

is a **Controlled Activity**.

19 "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change in the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

20 Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

21 Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into a body of a fish, impair health or cause death by its specific chemical properties.

4.2 The activity shall comply with the following standards:

a. none of the following effects shall arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):

i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
ii. any conspicuous change in the colour of water[22]; or
iii. any change in horizontal visibility greater than 30%[23]; or
iv. any emission of objectionable odour; or
v. the rendering of fresh water unsuitable for consumption by farm animals; and

b. any discharge shall not be toxic[24] to aquatic ecosystems.

4.3 The Council will exercise control over the following matters in relation to these activities:

a. the concentration of contaminants in the discharge;

b. the management of the stormwater system;

c. conditions to ensure that the effects described in Section 107 of the Act do not arise in the receiving water; and

d. the size of the zone allowed for reasonable mixing.

4.4 Subject to Section 94 (5) of the Act, the Council will consider consent applications for this activity without notification or the need to obtain the written approval of any person.

4.5 The information required with consent applications for these activities is set out in section 34.2.9 of this Plan.

**Explanation**
This rule applies to discharges of stormwater to water that are contaminated by drainage from industrial or trade premises where hazardous substances are stored or used. The Council has no control over discharges **into** stormwater drains, which are usually the responsibility of the relevant territorial

22 "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change in the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

23 Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

24 Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into a body of a fish, impair health or cause death by its specific chemical properties

authority. Those authorities may have bylaws restricting the discharge of contaminants into the drain.

This rule does not exempt owners of stormwater drains from compliance with the provisions of Sections 13 and 14 of the Act. That is, any diversion, or structures in the bed of a river or lake must comply with the relevant rules in the Regional Plan for Beds of Rivers and Lakes and Associated Activities, or SW Rules 8 or 9 in this Plan.

In urban areas, the Regional Council will consider multiple stormwater discharges as one application, where appropriate.

The discharge of water to water is provided for in DSW Rule 5.

**DSW Rule 5: Discharge of water to water**

The discharge of water to surface water, except in the Manawatu catchment

is a **Permitted Activity** provided

a. the discharge does not increase receiving water temperature by more than 3°C; and

b. the discharge does not cause erosion of the bed of the waterbody; and

c. the discharge does not cause flooding on adjoining properties without the property owner's written permission; and

d. the discharge does not alter the natural course of the waterbody.

**Advisory note**
Those activities involving the maintenance of a structure associated with established damming and diversion within an artificial watercourse that does not meet one or more of the specified performance conditions is a controlled activity under DSW Rule 9.

**Explanation**
This rule provides for the discharge of water to water, where there are no adverse effects resulting from the discharge. For instance, discharges of water to water cannot result in any change to the physical, chemical or biological condition of the receiving waterbody. Discharges of stormwater are provided for in DSW Rules 3 and 4.

**DSW Rule 6: Discharges to rivers, drains and other surface water**

6.1 Any discharge of contaminants or water to water that

a. is not specifically restricted by DSW Rules 1, or 2, or

b. is specifically provided for in either DSW Rules 3, 4, 5, 7, 8 or 9 but does not meet one or more conditions of the rule; or

c. is not specifically provided for by any rule in the Manawatu Catchment Water Quality Regional Plan or the Regional Plan for Beds of Rivers and Lakes and Associated Activities; or

d. is not specifically provided for by any rule in Chapter 6; or

e. discharges into rivers that are protected by National Water Conservation Orders.

is a **Discretionary Activity**.

6.2 The information required with consent applications for these activities is set out in section 34.2.10 of this Plan.

**Advisory Note**
This rule includes the provisions of the National Water Conservation Orders for the Manawatu-Wanganui Region, which are detailed in Appendix 1. Note that the Council has no ability to alter the provisions of the National Water Conservation Orders.

**Explanation**
This rule applies to all discharges of contaminants or water to surface water, except those specifically provided for in other rules in this chapter, or in the Manawatu Catchment Water Quality Regional Plan.

## 14.2 Rules that apply throughout the Region

These Rules apply throughout the Region, including the Manawatu catchment.

**DSW Rule 7: Discharge of water containing small amounts of sediment and other material**

Except as provided for by the Regional Plan for Beds of Rivers and Lakes and Associated Activities, the discharge of water containing sediment and other material derived from a watercourse into water

is a **Permitted Activity** provided

a. the discharge does not increase receiving water temperature by more than 3°C; and

b. the discharge does not cause erosion of the bed of the waterbody; and

c. the discharge does not cause flooding on adjoining properties without the property owner's written permission; and

d. the discharge does not alter the natural course of the waterbody; and

e. none of the following effects shall arise in the receiving waterbody, after reasonable mixing, as a result of the discharge:

   i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
   ii. any conspicuous change in the colour of the water[25]; or
   iii. any change in horizontal visibility greater than 30%[26]; or
   iv. any emission of objectionable odour at or beyond the property boundary; or
   v. the rendering of fresh water unsuitable for consumption by farm animals; and

f. the discharge shall not be toxic[27] to aquatic ecosystems.

**Advisory note**
Those activities involving the maintenance of a structure associated with established damming and diversion within an artificial watercourse that does not meet one or more of the specified performance conditions is a controlled activity under DSW Rule 9.

**Explanation**
This rule provides for discharges of water into water, which contain small amounts of sediment or other material derived from a watercourse. For example in de-silting operations which flush out pipes. Discharges of stormwater to water are provided for in DSW Rules 3 and 4. Any activity that cannot comply with the performance conditions of this rule is subject to DSW Rule 6.

### DSW Rule 8: Discharges of herbicides

Subject to DSW Rule 2, the discharge of any herbicide to water or to the adjacent river bank for the control of aquatic plants

25 "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change in the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

26 Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

27 Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into a body of a fish, impair health or cause death by its specific chemical properties.

is a **Permitted Activity** provided

a. the herbicide and any associated additive to aid effectiveness, are lawfully authorised for aquatic use in New Zealand and are used in accordance with the authorisation; and

b. the application is undertaken in accordance with Part 5 of the NZS8409: 1999 Code of Practice for the Management of Agrichemicals; and

c. the discharge is for the purpose of controlling aquatic plants and does not exceed the quantity, concentration or rate required for that purpose; and

d. no lawful take of water is adversely affected as a result of the discharge; and

e. where the discharge is undertaken on public land, the person who will apply the aquatic herbicide has completed the Growsafe Registered Chemical Applicators Certificate or equivalent qualification.

**Explanation**
This rule applies only to discharges of herbicides that do not cause adverse effects in aquatic environments, except to the plants they are designed to control. Application of agricultural chemicals (as defined in the Glossary) must be undertaken in accordance with the Regional Air Plan, other than the application of agricultural chemicals using a vehicle mounted device for weed wiping.

**DSW Rule 9: Discharge of contaminants resulting from maintenance**

9.1 The discharge of contaminants resulting from the maintenance of a structure associated with established damming or diversion within an artificial watercourse that does not comply with one or more of the performance conditions of DSW Rules 5 or 7; or SW Rules 7 or 9

is a **Controlled Activity**.

9.2 The Council will exercise control in relation to this activity over the following matters:

a. effects on water quality;

b. effects on instream habitats, spawning habitats and fish passage;

c. effects on water levels and passage of flows during the maintenance activity;

d. materials used for maintenance;

e. the periods and times the activity is undertaken;

f. the carrying out of measurements, samples, analysis, surveys, investigations or inspections at the consent holder's expense;

g. the provision of information to the Regional Council at specified times; and

h. payment of administrative charges.

9.3 The information required with resource consent applications for this activity is set out in Section 34.2.11 of this Plan.

**Explanation**
This rule provides for the discharge of contaminants resulting from the maintenance of a structure associated with established damming and diversion within an artificial watercourse that does not meet the performance conditions specified in DSW Rules 5 or 7; or SW Rules 7 or 9 as a controlled activity. Maintenance activities will not have significant adverse effects provided appropriate conditions are placed on resource consents that are specific to the activity and locality.

Maintenance of a structure associated with established damming and diversion in an artificial watercourse is defined in the glossary. Any discharge resulting from an activity that does not come within the definition of maintenance, such as an extension of the structure or its removal, requires a resource consent under DSW Rule 6 and/or SW Rule 10.

## 14.3 Non-regulatory Methods

**DSW Method 1 – Stormwater Discharges**
The Regional Council will investigate the environmental effects of stormwater discharges.

## 14.4 Reasons for adopting each of the regional rules

**DSW Rule 1: discharges of untreated effluent**

This rule has been adopted to enable people and communities to use water in the Region while providing for their health and safety. Discharges of untreated human sewage to water is offensive and objectionable to most people. Further, untreated sewage is likely to contain high concentrations of disease causing organisms capable of survival in the environment. In adopting this rule the Council is also recognising and providing for the relationship of Maori and their culture and traditions with water. This is a matter of national importance as defined in Section 6 of the Act.

**DSW Rule 2: discharges to lakes and natural wetlands**

This rule is necessary to address DSW Issue 3 and implement DSW Policy 1.b. Lakes and wetlands are particularly sensitive receiving environments. The only discharge to a lake in this Region is stormwater to Lake Horowhenua. The Regional Council, the Horowhenua District Council, the Department of Conservation, and the Lake Horowhenua Trustees have jointly developed a management strategy for the Lake Horowhenua and Hokio Stream catchment. The goal of the strategy is "To restore the water quality of Lake Horowhenua and the Hokio Stream to a level that enables a satisfactory improvement in both cultural and amenity values and the life-supporting capacity of the lake and the stream by 2018."

**DSW Rule 3: discharges of stormwater**

This rule is necessary to implement DSW Policy 1.a. The Council is satisfied that by restricting the application of the rule to discharges of stormwater, none of the effects described in Section 70 of the Act will arise in the receiving water.

**DSW Rule 4: discharges of stormwater from industrial or trade premises**

This rule is necessary to implement DSW Policy 1.b. The results of Auckland studies on stormwater quality corresponded roughly with that found in overseas studies, such as in New South Wales. The results were that suspended solids concentrations were up to 100 $g/m^3$ during a storm, faecal coliforms were typically higher in stormwater from the residential catchment investigated (median 17,000 MPN/100 ml) than the industrial catchment (median 5,000 MPN/100 ml), oil and grease were present, as were small quantities of copper, lead and zinc. The presence of solid waste in gutters averaged 368 g/kerb metre in the industrial area, compared to only 13 g/kerb metre in the low traffic residential area, and 26 g/kerb metre in the high traffic residential area. The presence of very low levels of DDT and dieldrin in gutter dusts indicated that they are still either being actively used or being redistributed from existing sinks (for example, soil and dust).

Treatment devices investigated by the Auckland Regional Council primarily focused on removing the sediment. Persistent contaminants that adhere to, or are absorbed by sediments can build up in lake beds and river estuaries where they can adversely affect aquatic fauna such as shellfish. Sediment in rivers reduces light transmission, smothers organisms that live on the beds of rivers, and accumulates in river estuaries.

The rule provides for the possibility of multiple discharge outlets being processed as single applications, which, except in special circumstances provided for in Section 94 (5) of the Act, will be non-notified. Providing for stormwater discharges as Controlled Activities provides the least regulatory solution, while ensuring that the Council is fulfilling its duties under the Act.

**DSW Rule 5: discharge of water to water**

This rule is necessary to implement DSW Policy 1.a. The Council is satisfied that by restricting the application of the rule to discharges of water to water, none of the effects described in Section 70 of the Act will arise in the receiving water.

**DSW Rule 6: discharges to rivers, drains and other surface water**

This rule is necessary to address DSW Issues 1, 2, and 4 and implement DSW Policy 1.b. Some rivers in the Region outside the Manawatu catchment have water quality that is very high, some have water quality that is naturally degraded. There is a huge variety in the types of contaminants discharged to rivers in the Region. Except for discharges of stormwater or of herbicides, discharges to all surface water require a site-specific or activity-specific assessment.

**DSW Rule 7: discharge of water containing small amounts of sediment and other material**

This rule is necessary to implement DSW Policy 1.b. There are a number of potential discharges of water into water, which contain small amounts of sediment or other material derived from a watercourse and are therefore potentially caught by the definition of 'contaminant' under the RMA. Council is satisfied that if the specified performance conditions are met, no adverse effects will occur.

**DSW Rule 8: discharges of herbicides**

This rule is necessary to implement DSW Policy 1.a. Some herbicides have been developed that can be discharged to water without any adverse effects on water quality or aquatic habitat. It is not necessary to require site-specific or activity-specific assessment for such discharges.

**DSW Rule 9: discharge of contaminants resulting from maintenance**

This rule provides for the discharge of contaminants resulting from the maintenance of a structure associated with established damming and diversion within an artificial watercourse as a controlled activity. The activity will not have significant adverse effects provided conditions can be placed on resource consents that are specific to the activity and the location. Inclusion of this rule within the Land and Water Regional Plan ensures consistency with the Regional Plan for Beds of Rivers and Lakes and Associated Activities.

## 14.5 Reasons for adopting the non-regulatory methods

**DSW Method 1 – Stormwater Discharges**
DSW Method 1 directs the Council to investigate and further quantify the environmental effects of stormwater discharges. The Council believes that the effects of stormwater are not significant in this Region (except for potentially in some sensitive receiving environments such as lakes).

## 15. Environmental Results Anticipated

The following environmental results are anticipated from the implementation of the policies in this Chapter:

a. Water quality in rivers that are affected by natural sediment loads or volcanic activity will be maintained[28].

b. Water quality that is better than is acceptable for contact recreation will be maintained.

c. Water quality that is below acceptable levels for contact recreation will be improved by 2009.

d. The degree of accelerated eutrophication in the coastal dune lakes will decrease.

e. The quality of surface water shall not be incompatible with values held by the tangata whenua.

[28] Those rivers affected by natural sediment include the lower/tidal reaches of major rivers (Manawatu and Whanganui rivers), and east coast rivers (Akitio and Owahango). The river affected by volcanic activity is the Whangaehu River.

# CHAPTER FOUR
# SURFACE WATER - TAKES AND USES

## 16. Scope of this Chapter

Chapter Four addresses all surface water activities that are restricted under Section 14 of the Act but are not addressed in other regional plans. Section 14 restricts the taking, use, damming and diverting of water, including all surface water and all groundwater. These activities are:

- the taking of surface water throughout the Region (Section 14(1)(a) of the Act) except in the Oroua catchment or the coastal marine area;
- the damming and diversion of water (Section 14(1)(a) of the Act) other than water in the coastal marine area or in rivers and lakes; and
- the use of water throughout the Region, specifically the use of heat or energy from water (Section 14(1)(b) of the Act) other than water in the coastal marine area.

Activities **not** provided for in this Chapter are:

- taking, using, damming and diverting groundwater (these are managed by provisions in Chapter Five of this Plan);
- taking surface water in the Oroua catchment (this is managed by provisions in the Oroua Catchment Water Allocation and River Flows Regional Plan);
- taking, using, damming and diverting coastal water (these are managed by provisions in the Regional Coastal Plan); and
- damming and diverting water in rivers and lakes (these are managed by provisions in the Regional Plan for Beds of Rivers and Lakes and Associated Activities).

There are two National Water Conservation Orders with effect in this Region. These are for the Manganui o te Ao River and the Rangitikei River. National Water Conservation Orders have a status greater than regional rules. They impose restrictions on the Council's powers as they relate to water and they can only be changed or revoked by the Minister for the Environment. These Orders are reproduced in Appendix 1.

## 17. Issues

The effects associated with taking and using surface water are described in the Background Report to this Plan. In accordance with these effects, and issues identified in the Regional Policy Statement for Manawatu-Wanganui, the Council has established that three issues need to be addressed in this Plan.

### SW Issue 1 - Possible habitat loss caused by over-allocation of water from some rivers

Prolonged periods of river flow below naturally occurring minima can reduce the amount of available habitat that is necessary to support trout and indigenous fauna. While fish can survive short-term low flows, and will do so periodically throughout their lifetime, their survival during periods of low flow is less predictable. Trout may be more susceptible to low flows than native fish, in particular if low flows are associated with increased temperatures or a decrease in food availability.

The effect of abstractions on flows during low flow periods has not been investigated by the Council. The rivers in the upper Manawatu catchment are suspected to be most at risk but research is necessary to substantiate this. Studies need to be prioritised according to known values of the rivers and the known demand for water from those rivers. The values associated with regionally significant rivers are specified in the Regional Policy Statement (Policies 8.1 and 8.3). The value of rivers in the Manawatu catchment are indicated by their water quality classification in the Manawatu Catchment Water Quality Regional Plan.

### SW Issue 2 - Increased flood risk due to damming and diverting artificial watercourses

Artificial watercourses include farm drainage canals and roadside drains. Many artificial watercourses in the Region have been specifically designed to improve drainage from otherwise swampy or poorly drained land. Damming of such watercourses can increase the risk of flooding or reduce the suitability of the surrounding land for human uses such as agriculture.

Adverse effects associated with diverting water in artificial watercourses generally relate to changes in the drainage patterns of inundated land. Water diverted from one drain to another can increase the flow in the receiving drain to a level greater than its carrying capacity. This can then increase the potential for higher water table levels or inundation of land downstream. At the same time, it may lower water tables on upstream land.

### SW Issue 3 - Habitat loss caused by draining and diverting wetlands

Historically wetlands were common in many parts of the Region, but many have now been drained to improve agricultural productivity or to extend urban areas. There are some wetlands in the Kaimanawa Ranges north of Waiouru that are still in a relatively natural state, while others around the coastal dune lakes on the west coast are not.

Lowland wetlands are at threat from increased eutrophication and decreased water table levels from adjoining land uses. Riparian wetlands are very productive areas for flora and fauna and they are natural nutrient sinks.

Wetlands are important in terms of preserving indigenous biodiversity by providing habitat suitable for indigenous flora and fauna.

Pukepuke Lagoon, Lake Horowhenua and its margin, and Lake Papaitonga and the adjacent scenic reserve are three wetland areas that are specified as regionally significant features in the Regional Policy Statement (Policy 8.3).

Diverting water from a wetland and from nearby land reduces the water level in the wetland and can reduce its habitat suitability for indigenous flora and fauna. Despite their apparent lack of significance in terms of size and vegetation, the present scarcity of wetlands in the Region gives them significance in terms of their contribution to maintaining indigenous habitats. This is particularly important in terms of the potential loss of indigenous biodiversity should the remaining wetlands be drained.

# 18. Objective

**SW Objective 1 Maintaining surface water quantity**

Where appropriate, to maintain water levels in lakes and wetlands, and flows in rivers at levels that maintain or enhance or safeguard their existing life-supporting capacity.

# 19. Policies

## 19.1 Policies

The Council has adopted eight policies to manage surface water takes and uses in parts of this Region that are outside the Oroua catchment. These policies address the issues identified in Section 17 above. They are implemented by methods given in Sections 20.1, 20.2 and 20.3, and provide guidance for the assessment of resource consent applications. The policies are explained in detail in Section 19.2. The reasons for adopting these policies, in terms of Section 32 of the Act, are given in Section 19.3.

**SW Policy 1: Use of regional rules**

To manage the taking and use of all surface water, and the damming and diversion of water in artificial watercourses and wetlands, by adopting regional rules that:

a. permit all activities that have minor effects on the environment provided specified conditions are met; and

b. regulate those activities that have the potential to cause any adverse effect on the receiving environment that is more than minor, and where conditions to manage the activity need to be site-specific; and

c. prohibit any activities that have an adverse effect on the environment that cannot be adequately avoided, remedied or mitigated; and

d. contain measurable and enforceable conditions, standards and terms so that the community can undertake their activities with certainty; and

e. are consistent with provisions in Water Conservation Orders and Notices.

**SW Policy 2: Matters to be considered for resource consent applications**

The Council will have particular regard to the following matters when considering resource consent applications for surface water abstractions, or damming or diverting water in any artificial watercourse:

a. the effects of the activity on:

i. the natural flow regime;
ii. the duration of low flows:
iii. significant aquatic habitat for indigenous fauna and flora;
iv. the available habitat for trout during low flows;
v. lake levels and lake margins; and
vi. water levels in wetlands; and
vii. natural character; and

b. whether the river or lake is being managed for the purpose of fisheries or fish spawning by a classification in the Manawatu Catchment Water Quality Regional Plan; and

c. whether the proposed activity would adversely affect the specified values of any regionally significant river or lake identified in, or that meets the criteria in Policy 8.1 of the Regional Policy Statement for Manawatu-Wanganui; and

d. whether the proposed activity would adversely affect recharge rates to groundwater aquifers; and

e. the effect of the activity on places or features of significance to tangata whenua, including adverse effects on mahinga kai; and

f. the efficient use of the proposed water take; and

g. the knowledge of the particular resource; and

h. the social and economic well being and the health and safety of people and communities; and

i. whether the activity will increase the risk of flooding, or pose a risk to infrastructure.

**SW Policy 3: Maintaining features and characteristics of the Hautapu, Mangatainoka and Makuri Rivers and their tributaries**

To grant consents to take and use water from

a. the Hautapu River upstream of its confluence with the Oraukura Stream; or

b. any tributaries of the Hautapu River upstream of its confluence with the Oraukura Stream; or

c. the Mangatainoka River; or

d. any tributary of the Mangatainoka River; or

e. the Makuri River; or

f. any tributary of the Makuri River, including the Makuri-iti River

only where the Council is satisfied that there will be no adverse effect on

g. the recreational fishery value of the river; or

h. any scenic characteristics of regional significance; or

i. any wildlife habitats of regional significance; or

j. any recreational value of regional significance; or

k. the habitat of trout

and for the Makuri River or any tributary of the Makuri River, including the Makuri-iti River that the abstraction will not reduce the rate of flow below 95% of the river flow[29] at that point.

**SW Policy 4: Whakapapa and Whanganui River minimum flows**

To manage the taking and use of water from the Whakapapa River and tributaries upstream of the footbridge flow gauging station (at or about map reference NZMS 260 S19: 226-295); or the Whanganui River and tributaries upstream of the Te Maire flow gauging station (at or about map reference NZMS 260 S19: 998-490) in a manner that:

a. maintains the existing life-supporting capacity;

[29] "river flow" in rivers affected by the Local Water Conservation (Makuri River) Notice 1990 is defined in that Notice. This definition is reproduced in the Glossary.

b. avoids, remedies or mitigates adverse effects on natural, cultural and amenity values; and

c. recognises the operational difficulties associated with meeting minimum flows that are some distance from the abstraction point.

**SW Policy 5: Rangitikei River minimum flows (Middle River)**

To ensure that the rate of flow at any point in

a. the Rangitikei River from its confluence with the Makahikatoa Stream (approximate map reference U21 725 888) to the Mangarere Bridge (approximate map reference T22 483 496); or

b. the Whakaurekau River or any of its tributaries; or

c. the Kawhatau River or its tributaries the Pouranaki River and the Mangakokeke Stream

is not reduced to less than 95 percent of the river flow[30] at that point.

**SW Policy 6: Manganui o te Ao River minimum flows**

To ensure that the rate of flow of waters in

a. the Manganui o te Ao River downstream of its confluence with the Waimarino Stream; or

b. the Waimarino Stream; or

c. the Orautoha Stream

does not differ from the normal flow[31] by more than 5 percent and in any case does not fall below the minimum flow defined for the River in the National Water Conservation (Manganui o te Ao River) Order 1988.[32]

**SW Policy 7: Protection of wetlands**

To ensure that where an application to take or divert water is granted that would cause water levels in any wetland to decline below naturally occurring

30 "river flow" in rivers affected by the National Water Conservation (Rangitikei River) Order 1993 is defined in the Order. This definition is reproduced in the Glossary. The Order is reproduced in full in Appendix 1.

31 "normal flow" in rivers affected by the National Water Conservation (Manganuioteao River) Order 1988 is defined in the Order. This definition is reproduced in the Glossary. The Order is reproduced in full in Appendix 1.

32 "minimum flow" in rivers affected by the National Water Conservation (Manganuioteao River) Order 1988 is defined in the Order. This definition is reproduced in the Glossary. The Order is reproduced in full in Appendix 1.

levels, conditions are attached requiring the permit holder to remedy, mitigate or offset those effects, having regard to:

a. the degree of modification from its natural state; and

b. the biological diversity or rarity of aquatic or terrestrial species or habitats; and

c. its significance as an area of indigenous vegetation, or habitat for indigenous fauna; and

d. its natural character; and

e. its hydrological or biological relationship with a river or lake in terms of river flows, lake levels or water quality; and

f. its significance in terms of scientific, educational, recreational, aesthetic or intrinsic values; and

g. its cultural or spiritual significance to Maori; and

h. the cumulative loss of wetlands in the local area.

**SW Policy 8: Protection of regionally significant wetlands**

To protect those wetlands identified in the Regional Policy Statement from the adverse effects of diverting water.

## 19.2 Explanation of policies

These policies establish the regulatory and non-regulatory framework to avoid or mitigate adverse effects caused by taking and using surface water throughout the Region, and adverse effects caused by damming and diverting any surface water, except water in rivers and lakes.

SW Policy 1 provides direction to adopt an effects-based approach, required for the adoption of regional rules by Section 68(3) of the Act. This policy also recognises the importance of other statutory mechanisms that apply to some rivers in the Region.

SW Policy 2 provides guidance on matters to which the Council will have particular regard when assessing any resource consent application to undertake an activity restricted by a rule in this Plan. These matters will be considered where the Council has the discretion to grant or refuse an application.

SW Policy 2 is consistent with the requirements of Section 104 of the Act, and Policies 12.4 and 34.2 of the Regional Policy Statement for Manawatu-Wanganui. This Policy is subject to Part II (Sections 5 to 8) of the Act, meaning that Part II has precedence over SW Policy 2.

The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

SW Policy 3 provides guidance for the granting of any water permit relating to rivers previously governed by Local Water Conservation Notices for the Hautapu, Mangatainoka and Makuri Rivers. The Hautapu and Mangatainoka notices specified features, respectively their regional significance as a brown trout fishery, and regional significance as a recreational fishery, that were to be protected. The Makuri Notice specified that its scenic characteristics of regional significance, and recreational, fisheries and wildlife habitats of regional significance were to be protected. Local Water Conservation Notices have the status of regional rules and can be replaced by new instruments in regional plans in accordance with the First Schedule process.

The Regional Policy Statement provides direction for the Council to protect specified values of rivers identified as having regional significance (Policies 8.1 and 8.3). This includes rivers that were protected by Local Water Conservation Notices.

SW Policy 4 provides guidance to assess resource consents to take and use water in such a way that the water resource is available to meet as many demands as possible, and so that the resource can be enjoyed and shared by all interests. This policy requires the balancing of all relevant factors including the benefits derived from taking water, the requirements of conservation and recreation, cultural values, and the practicality of implementing various flow regimes.

SW Policies 5 and 6 provide guidance in accordance with the National Water Conservation (Rangitikei River) Order 1993 and the National Water Conservation (Manganui o te Ao River) Order 1988. The Council cannot grant water permits to take or use water from rivers that are protected by National Water Conservation Orders unless the proposed activity is in accordance with those Orders.

SW Policy 7 provides direction to the Council to require permit holders to mitigate, remedy or offset adverse effects on wetlands associated with any taking or diverting of water. In those situations where it may be appropriate to drain a wetland the Council may require the establishment of a similar wetland in another place to offset any adverse effects. This recognises that it is a matter of national importance to preserve the natural character of wetlands and protect them from inappropriate use. It is also a matter of national importance to protect significant areas of indigenous flora and significant habitats of indigenous fauna.

SW Policy 8 provides direction to the Council when managing the diversion of water from regionally significant wetlands. This policy is consistent with the

provisions of the Regional Policy Statement (Policy 8.3) and recognises that it is a matter of national importance to preserve the natural character of wetlands.

## 19.3 Reasons for adopting the objective and policies

SW Objective 1 has been adopted to address the issues associated with surface water quantities in this Region. In adopting this objective, the Council is recognising and providing for the relationship of Maori and their culture and traditions with water and other taonga (Section 6 of the Act). The Council has also had particular regard to the efficient use of natural resources, the maintenance and enhancement of amenity values and the quality of the environment, the intrinsic value of ecosystems, and the protection of the habitat of trout (Section 7 of the Act).

SW Policy 1 has been adopted to ensure that surface water takes and uses are managed according to the level of adverse effect they may have on the environment. The statutory mechanisms of Water Conservation Orders have been provided for to ensure that this Plan is not inconsistent with those Orders.

SW Policy 2 has been adopted to address SW Issues 1 and 2, and to assist the Council in achieving its function of controlling the taking, use, damming and diversion of water in any waterbody. This Plan must provide effective guidance for assessing resource consent applications, and give certainty to applicants. The matters included in this policy are consistent with the matters in Section 104 of the Act, specific issues in this Region, and matters in the Regional Policy Statement for Manawatu-Wanganui. In adopting this policy, the Council is recognising and providing for matters of national importance as required by Section 6 of the Act, and has had particular regard to the matters in Section 7, in particular, the efficient use of natural resources.

SW Policy 3 is necessary to address SW Issue 1 and to ensure that the features protected by provisions in the Local Water Conservation Notices for the Hautapu, Mangatainoka and Makuri Rivers have a similar level of protection in this Plan.

SW Policy 4 is necessary to address SW Issue 1 and to ensure that minimum flows are maintained. Maintaining these minimum flows can be achieved by the adoption of regional rules and setting appropriate conditions on water permits for the Whakapapa and Whanganui Rivers.

SW Policies 5 and 6 are necessary to ensure that this Plan is not inconsistent with the National Water Conservation (Rangitikei River) Order 1993 and the National Water Conservation (Manganui o te Ao River) Order 1988.

SW Policy 7 and 8 are necessary to address SW Issue 3; to provide for the protection of wetlands from inappropriate use; and to protect significant areas of indigenous flora and significant habitats of indigenous fauna. These policies are consistent with the Regional Policy Statement.

# 20. Methods of Implementation

## 20.1 Rules for surface water abstractions throughout the Region, except the Oroua catchment

### SW Rule 1: Prohibited Takes from Rivers protected by National Water Conservation Orders

1.1 Any abstraction and use of water from

a. the Rangitikei River itself from its source (approximate map reference U19 723 313) to its confluence with the Makahikatoa Stream (approximate map reference U21 725 888); or

b. any river or stream contributing water to the Rangitikei River upstream of its confluence with the Makahikatoa Stream; or

c. the Manganui o te Ao River upstream of its confluence with the Waimarino Stream; or

d. the Makatote River; or

e. the Mangaturuturu River

is a **Prohibited Activity**.

**Advisory Note**
Section 14(3)(b) of the Act permits water takes for reasonable domestic needs, the needs of animals, or for fire-fighting purposes without the need to obtain a resource consent as long as the taking or use does not, or is not likely to, have an adverse effect on the environment.

**Explanation**
This rule applies to river reaches that are covered by the National Water Conservation (Manganui o te Ao River) Order 1988 and the National Water Conservation (Rangitikei River) Order 1993. Abstractions of water in the river reaches specified in this rule are prohibited under the existing National Water Conservation Orders.

### SW Rule 2: Takes from the Hautapu, Mangatainoka or Makuri Rivers and their tributaries

2.1 Except for consent applications from territorial authorities that seek to maintain the same volume or rate of take (or less) for the purpose of continuing existing community municipal water supply, any abstraction and use of more than 15 cubic metres per day of water from

a. the Hautapu River upstream of its confluence with the Oraukura Stream; or

b. any tributaries of the Hautapu River upstream of its confluence with the Oraukura Stream; or

c. the Mangatainoka River; or

d. any tributary of the Mangatainoka River; or

e. the Makuri River; or

f. any tributary of the Makuri River

is a **Non-Complying Activity.**

2.2 The information required with consent applications for these activities is set out in section 34.3.1 of this Plan.

**Advisory Note**
The abstraction and use of water by territorial authorities for the purpose of continuing existing community municipal water supply is assessed as a discretionary activity under SW Rule 5. The exception to SW Rule 2 for continuing existing community municipal water supply only applies to consent applications from territorial authorities that seek to either maintain or decrease the volume of water or rate of take. If the application from the territorial authority increases the volume and/or rate of take then this is assessed as a non-complying activity under SW Rule 2.

Section 14(3)(b) of the Act permits water takes for reasonable domestic needs, the needs of animals, or for fire-fighting purposes without the need to obtain a resource consent as long as the taking or use does not, or is not likely to, have an adverse effect on the environment.

The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

**Explanation**
This rule applies to rivers and sections of rivers that were previously protected by Local Water Conservation Notices. When making a decision on resource consent application for a Non-Complying Activity, the Council may only grant the consent if it is satisfied that —

*(i) the adverse effects on the environment will be minor; or*
*(ii) granting the consent will not be contrary to the objectives and policies of the plan or proposed plan.* (Section 105 (2)(b) of the Act.)

These rivers have regional significance because of particular values which are specified in the Regional Policy Statement (Policies 8.3 and 15.3). Where the adverse effects on any of these values are more than minor, a permit can only be granted if sub-paragraph (ii) is satisfied. Even then, the Council retains discretion to decline the consent. SW Policy 3 guides decision making for assessing applications for activities governed by this rule.

Clauses a. and b. of this rule replace clause 4.2 of the Local Water Conservation (Hautapu River) Notice 1990, which is *"No water right under section 21 of the [Water and Soil Conservation] Act shall be granted by the Regional Water Board, and no general authorisation under section 22 of the [Water and Soil Conservation] Act shall be made by the Regional Water Board, in respect of the Hautapu River and its tributaries above the confluence with the Oraukura Stream if the effect would be to significantly diminish the fisheries habitat of any part of the water way provided that water rights and general authorisations may be made in respect of any part of those waters for any of the following purposes:*

*(a) research into, and the enhancement of fisheries and wildlife habitats;*
*(b) the maintenance or protection of roads, bridges and other necessary public utilities;*
*(c) soil conservation and river control works undertaken pursuant to the Soil Conservation and Rivers Control Act 1941."*

Clauses c. and d. of this rule replace clause 5.1 of the Local Water Conservation (Mangatainoka River) Notice 1991, which is *"A water right under section 21 of the [Water and Soil Conservation] Act may not be granted by the Regional Council and a general authorisation under section 22 of the [Water and Soil Conservation] Act may not be made by the Regional Council in respect of the River if the combined effect of the grant or authorisation and of existing rights would have a significant adverse effect on the feature identified in clause 3."*

Clauses e. and f. of this rule replace Section 4 of the Local Water Conservation (Makuri River) Notice 1990, which is *"Because of the characteristics and features specified in clause 3 of this Order, the rate of flow of natural water to be retained at any point in the River shall be not less than 95 percent of the River Flow at that point."*

The terms "River" and "River Flow", as defined in the Interpretation of that Notice , are reproduced below.

*"River" means the Makuri River itself from its source (approximate map reference NZMS 260 Sheet U24 737804 and 734804) to its confluence with the Tiraumea River (approximate map reference NZMS 260 Sheet T24 568772), together with all of its tributaries, including the Makuri-iti River.*

*"River Flow" means for any given point on the River:*

*(a) the instantaneous flow occurring at that point; plus*

*(b) the sum of abstractions from the River and its tributaries upstream of that given point expressed as an instantaneous flow.*

The restrictions in these notices do not apply to the taking of water for domestic needs, for the needs of animals, and for or in connection with fire-fighting purposes. SW Rule 4 allows abstractions of 15 cubic metres or less per day as a permitted activity. Abstractions over 15 cubic metres per day require resource consent under this rule. New consent applications for these activities will be assessed in accordance with SW Policy 3 of this chapter.

**SW Rule 3: Whakapapa and Whanganui River minimum flows**

3.1 Except as provided for by SW Rules 3A, 3B and 4, any abstraction and use of water

a. from the Whakapapa River and tributaries upstream of the footbridge flow gauging station when flows at the footbridge flow gauging station (at or about map reference NZMS 260 S19: 226 295) fall to three cubic metres per second; or

b. from the Whanganui River and tributaries upstream of Te Maire flow gauging station between 1 December and 31 May inclusive when flows at the Te Maire flow gauging station (at or about map reference NZMS 260 S19: 998 490) fall to 29 cubic metres per second

is a **Non-Complying Activity.**

3.2 The information required with consent applications for these activities is set out in section 34.3.1 of this Plan.

**Advisory Note**
The Regional Council shall, within 12 months of the Crown settling any Treaty of Waitangi claim by iwi in respect of the Whanganui River, undertake a review of SW Rule 3 for the purpose of making the rule consistent with all Resource Management Act matters contained in the said settlement.

**Explanation**
This rule applies to rivers for which minimum flows were fixed under Section 20J of the Water and Soil Conservation Act 1967. When making a decision on resource consent applications for a Non-Complying Activity, the Council may only grant the consent if it is satisfied that –

(i) *the adverse effects on the environment will be minor; or*
(ii) *granting the consent will not be contrary to the objectives and policies of the plan or proposed plan.* (Section 105(2)(b) of the Act).

These rivers have regional significance because of particular values which are specified in the Regional Policy Statement for Manawatu-Wanganui (Policy 8.3). Where the adverse effects on any of these values is more than minor, a

permit can only be granted if sub-paragraph (ii) is satisfied. Even then, the Council retains discretion to decline the consent. SW Policy 4 guides decision making for assessing applications for activities governed by this Rule.

Consents to take water from these rivers may include a condition requiring that the taking of water be restricted or suspended when flows fall to the levels specified in this Rule.

**SW Rule 3A: Whakapapa River minimum flow**

3A.1 Subject to SW Rule 4, any abstraction and use of water from the Whakapapa River and tributaries upstream of the footbridge flow gauging station when flows at the footbridge flow gauging station (at or about map reference NZMS S19: 226-295) fall below

i. three cubic metres per second for less than one hour, but not below 2.8 cubic metres per second at any time

is a **Discretionary Activity**.

3A.2 The information required with consent applications for these activities is set out in section 34.3.1 of this Plan.

**Advisory note**
The Regional Council shall, within 12 months of the Crown settling any Treaty of Waitangi claim by iwi in respect of the Whanganui River, undertake a review of SW Rule 3A for the purpose of making the rule consistent with all Resource Management Act matters contained in the said settlement.

**Explanation**
This rule provides for operational flexibility when implementing the minimum flow regime for the Whakapapa River. If the take does not comply with SW Rule 3A it is assessed as a non-complying activity under SW Rule 3.

In managing the abstraction and use of water there are practical and operational difficulties in maintaining absolute minimum flow requirements, particularly where there is a dynamic flow regime and the points of abstraction or use are some distance from the point at which the flow is to be maintained. SW Rule 3A allows some operational flexibility to restore flows to the minimum flow requirement without increasing the adverse effects on the ecological values of the Whakapapa River.

**SW Rule 3B: Whanganui River minimum flow**

3B.1 Subject to SW Rule 4, any abstraction and use of water from the Whanganui River and tributaries upstream of the Te Maire flow gauging station (at or about map reference NZMS 260 S19: 998-490) between 1 December and 31 May inclusive when flows fall below

i. 28.5 cubic metres per second for less than 8 hours of any day[33] but not below 28 cubic metres per second at any time

is a **Discretionary Activity**.

3B.2 The information required with consent applications for these activities is set out in section 34.3.1 of this Plan.

**Advisory Note**
The Regional Council shall, within 12 months of the Crown settling any Treaty of Waitangi claim by iwi in respect of the Whanganui River, undertake a review of SW Rule 3B for the purpose of making the rule consistent with all Resource Management Act matters contained in the said settlement.

**Explanation**
This rule provides for operational flexibility when implementing the minimum flow regime for the Whanganui River. If the take does not comply with SW Rule 3B it is assessed as a non-complying activity under SW Rule 3. A water take from the Whanganui River in the months between 1 June and 30 November is assessed as a discretionary activity under SW Rule 5.

In managing the abstraction and use of water there are practical and operational difficulties in maintaining absolute minimum flow requirements, particularly where there is a dynamic flow regime and the points of abstraction or use are some distance from the point at which the flow is to be maintained. SW Rule 3B allows some operational flexibility to restore flows to the minimum flow requirement without increasing the adverse effects on the ecological values of the Whanganui River.

**SW Rule 4: Permitted surface water takes**

Subject to SW Rule 1, any abstraction and use of surface water, except from the Oroua catchment or from rivers protected by National Water Conservation Orders, of 15 cubic metres or less per day

is a **Permitted Activity** provided

a. where there is, or is intended to be, more than one abstraction point serving the land described in a particular certificate of title, the total existing and proposed abstractions serving the land described in that title do not exceed 15 cubic metres per day; and

b. a screen shall be used to ensure that the taking of water does not cause juvenile or other fauna to be damaged, killed, or removed from the waterbody.

**Advisory Note**
Section 14(3)(b) of the Act permits water takes for reasonable domestic needs, the needs of animals, or for fire-fighting purposes without the need to

[33] "Any day" means a 24 hour period commencing at midnight.

obtain a resource consent as long as the taking or use does not, or is not likely to, have an adverse effect on the environment.

The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

**Explanation**
This rule allows small abstractions from surface water to allow people to provide for their domestic needs and for the needs of stock. Abstractions from the Oroua catchment are managed by the Oroua Catchment Water Allocation and River Flows Regional Plan. The conditions in this Rule are to ensure that small abstractions with very minor effects on the river are permitted without the need for a resource consent while removing the possibility for any person to set up multiple abstractions for a combined take which could have adverse effects on the river. If the total existing and proposed abstractions serving the land described in that title exceed 15 cubic metres per day a consent shall be required in accordance with SW Rules 2, 3, or 5.

This rule is subject to SW Rule 1, which applies to all abstractions from rivers where National Water Conservation Orders apply. The Orders exempt the taking of water for domestic needs, for the needs of animals, and for or in connection with fire-fighting purposes from all restrictions.

**SW Rule 5: All other surface water takes**

5.1 Subject to SW Rules 1, 2 and 3, and except for within the Oroua catchment, the abstraction and use of any surface water, of more than 15 cubic metres of surface water per day

is a **Discretionary Activity**.

5.2 The information required with consent applications for these activities is set out in section 34.3.2 of this Plan.

**Advisory Note**
This Rule provides for the provisions of the National Water Conservation Orders for the Manawatu-Wanganui Region, which are detailed in Appendix 1. Note that the Council has no ability to alter the provisions of the National Water Conservation Orders.

Section 14(3)(b) of the Act permits water takes for reasonable domestic needs, the needs of animals, or for fire-fighting purposes without the need to obtain a resource consent as long as the taking or use does not, or is not likely to, have an adverse effect on the environment.

The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

**Explanation**
This rule applies to abstractions of water from all lakes, and from all rivers except those specifically provided for in SW Rules 1, 2, and 3. Abstractions from the Oroua catchment are managed by the Oroua Catchment Water Allocation and River Flows Regional Plan. This rule also applies to abstractions of surface water from artificial watercourses and wetlands.

### SW Rule 6: Use of heat or energy from surface water

The use of heat or energy from surface water

is a **Permitted Activity.**

**Explanation**
This rule applies to the use of heat from geothermal water, and the use of energy from water, for example, for hydro-electric power generation. These uses are restricted by Section 14 (1)(b) of the Act.

Any structures used for the purpose of this rule must be in accordance with the provisions of the Regional Plan for Beds of Rivers and Lakes and Associated Activities or a resource consent.

## 20.2 Rules for damming and diverting surface water, except water in rivers and lakes

### SW Rule 7: Small dams in artificial watercourses

Any damming of water and associated discharge of sediment in an artificial watercourse

is a **Permitted Activity** provided

a. the catchment area above the dam shall not be greater than 50 hectares; and

b. the height of the dam shall be no more than three metres (measured vertically from the bed on the upstream side of the dam to the spillway of the dam); and

c. provision is made for the discharge of water in a manner that shall not cause scouring or erosion of the watercourse beyond the point of

discharge, and that shall enable the discharge of excess water without the dam being overtopped; and

d. water impounded by the dam shall not encroach onto adjoining properties without the property owner's written permission; and

e. no water shall be impounded within a residential or urban area; and

f. any discharge of sediment directly associated with the activity shall not after a distance seven times the width of the watercourse or 200 metres downstream of the activity (whichever is the lesser) give rise to any of the following effects:

i. any conspicuous change in the colour of water[34]; or
ii. any change in horizontal visibility greater than 30%[35]; and

g. any materials for the construction activity, no longer required as part of the structure, shall be removed from the watercourse as soon as practicable on completion of the activity; and

h. any diversion of water required to construct the dam structure shall be reinstated on completion of the construction activity; and

i. contaminants (including but not limited to oil, hydraulic fluids, petrol, diesel, other fuels, lubricants, paint or solvent but excluding sediment) shall not be released to water as a result of the activity; and

j. refuelling of machinery or equipment shall not take place in an area where spills may enter water; and

k. during construction any machinery or equipment not in use shall be stored out of the watercourse; and

l. any discharge shall not be toxic[36] to aquatic ecosystems.

**Advisory note**
Those activities involving the maintenance of a structure associated with established damming and diversion within an artificial watercourse that does not meet one or more of the specified performance conditions is a controlled activity under DSW Rule 9.

**Explanation**
This rule applies to water in artificial watercourses only, not to any damming of water in rivers, lakes or wetlands. Damming of water in rivers and lakes

[34] "Change" refers to change in time as well as space. As a guide a change in water colour from blue to green or green to light yellow/brown is considered a conspicuous change in colour. This is a 20 point change in the Munsell Scale. A change in water colour from blue to blue/green is only 10 points on the Munsell Scale and this is not considered a conspicuous change in colour.

[35] Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

[36] Discharges toxic to aquatic ecosystems includes any discharges released into an aquatic ecosystem at such concentrations that it can, when taken into a body of a fish, impair health or cause death by its specific chemical properties

requires a water permit in accordance with the Regional Plan for Beds of Rivers and Lakes and Associated Activities. Damming water in wetlands requires a water permit in accordance with SW Rule 10.

Structures that impede water flow within drains may need approval as specified in the Land Drainage Act 1908, particularly the provisions of Section 26.

**SW Rule 8: Diverting water from wetlands**

8.1 Any diversion of water from

a. Kutaroa and Otahupitara Swamps (Irirangi Swamp);

b. Makirikiri Tarns; or

c. Reporoa Bog

is a **Non-Complying Activity.**

8.2 The information required with consent applications for these activities is set out in section 34.3.3 of this Plan.

**Explanation**
This rule applies to water in wetlands and not to any diversion of water in rivers, lakes, or artificial watercourses. Diverting water in rivers and lakes requires a water permit in accordance with the Regional Plan for Beds of Rivers and Lakes and Associated Activities. Diverting water in artificial watercourses is provided for by SW Rule 9 below. "Wetland" is defined in the Act and reproduced in the Glossary.

The three wetlands specified in the rule are those identified in the Regional Policy Statement (Policy 8.3). The Kutaroa and Otahupitara Swamps (Irirangi Swamp) are near Waiouru; the Makirikiri Tarns and the Reporoa Bog are on the Mangaohane Plateau.

**SW Rule 9: Diverting water except from wetlands, lakes or rivers**

Subject to SW Rule 8 any diversion of surface water in an artificial watercourse

is a **Permitted Activity** subject to the following

a. the diversion does not cause lowering of water levels in any lake, river or wetland; and

b. the diversion does not cause adverse effects that are more than minor on groundwater levels on neighbouring properties; and

c. the diversion does not accentuate erosion or flooding on roads or neighbouring properties.

**Advisory note**
Those activities involving the maintenance of a structure associated with established damming and diversion within an artificial watercourse that does not meet one or more of the specified performance conditions is a controlled activity under DSW Rule 9.

**Explanation**
This rule applies to any diversion of water that is not specifically restricted by SW Rule 8 or by a rule in the Regional Plan for Beds of Rivers and Lakes and Associated Activities. For example, the diversion of water in a farm drain to a roadside drain or river is permitted by this rule.

### SW Rule 10: All other damming or diversion of surface water

10.1 Except as provided for in the Regional Plan for Beds of Rivers and Lakes and Associated Activities, any damming or diversion of surface water that

a. is not specifically provided for by SW Rules 7, 8, or 9; or

b. is specifically provided for in either SW Rules 7, 9 or 11 but does not meet one or more conditions of the rule

is a **Discretionary Activity.**

10.2 The information required with consent applications for these activities is set out in section 34.3.4 of this Plan.

**Explanation**
This rule applies to any damming and diverting of water that does not comply with SW Rules 7 or 9, and to the damming and diverting of wetlands other than those specified in the Regional Policy Statement. Diverting water from those wetlands identified in the Regional Policy Statement (Policy 8.3) requires a water permit in accordance with SW Rule 8.

This rule does not apply to any damming or diversion of rivers and lakes that is provided for in the Regional Plan for Beds of Rivers and Lakes and Associated Activities.

### SW Rule 11: Established damming or diversion in an artificial watercourse

11.1 Except as provided for by SW Rules 7 and 9, any established damming or diversion of water within an artificial watercourse

is a **Controlled Activity**.

11.2 The Council will exercise control in relation to these activities over the following matters:

a. effects on water quality;

b. effects on channel, bank or bed stability of the artificial watercourse;

c. effects on fish passage;

d. effects on natural character;

e. effects on significant indigenous vegetation and significant habitats of indigenous flora and fauna;

f. effects on amenity values;

g. effects on Maori cultural values;

h. the carrying out of measurements, samples, analysis, surveys, investigations or inspections at the consent holder's expense;

i. the provision of information to the Regional Council at specified times; and

j. payment of administrative charges.

11.3 The information required with resource consent applications for this activity is set out in Section 34.3.5 of this Plan.

**Explanation**
This rule applies to established damming and diversion in artificial watercourses. This rule does not apply to any associated taking, use and discharge of water over or through any dam or diversion structure necessary to maintain a minimum flow requirement downstream of the structure. These activities may require a resource consent in accordance with section 14 and/or 15 of the Act. Refer to SW Rule 10.

Established damming and diversion in the bed of a river or lake is provided for in the Regional Plan for Beds of Rivers and Lakes and Associated Activities.

## 20.3 Non-regulatory method

### SW Method 1 - Wetland Inventory

The Regional Council will prepare, in consultation with District Councils and other relevant agencies and resource users, a wetland inventory as part of the Land and Riparian Management Strategy.

### SW Method 2 – Site investigations

To consider investigating the location of minimum flow sites listed in SW Rules 3, 3A and 3B to determine if additional or alternative monitoring sites located closer to the points of take on the Whanganui and Whakapapa Rivers are appropriate.

### SW Method 3 – Wetland Enhancement

The Regional Council will provide annual funding of at least $50,000 to the He Tini Awa Trust for the purpose of wetland restoration, preservation, enhancement and creation.

## 20.4 Reasons for adopting each of the regional rules

### SW Rule 1: takes from rivers protected by Water Conservation Orders

This rule is necessary to provide for the restrictions imposed by the National Water Conservation Orders for the Rangitikei and Manganui o te Ao Rivers. In the case of the rivers specified in the National Water Conservation (Manganui o te Ao River) Order 1998 and the National Water Conservation (Rangitikei River) Order 1993 the Council's ability to grant consents is constrained by the relevant Order.

### SW Rule 2: takes from the Hautapu, Mangatainoka or Makuri Rivers and their tributaries

This rule is necessary to implement SW Policy 1, and provide an appropriate level of protection to regionally significant rivers in the Region. Until the preparation of this Plan, all new abstractions from these rivers were restricted by provisions in Local Water Conservation Notices.

### SW Rule 3: Whakapapa and Whanganui River minimum flows

This rule is necessary to implement SW Policy 4 and to provide an appropriate level of protection for the water resources of these rivers.

**SW Rules 3A and 3B: Whakapapa and Whanganui River minimum flows**

Council considers that it is important to maintain the minimum flow regime set by the Planning Tribunal while at the same time acknowledging the operational difficulties that may be incurred when implementing the minimum flows. Reducing water levels and flows for short durations as provided for in SW Rules 3A and 3B will not have an adverse effect on the ecological values of the River. Although minimum flows are specified for the Whakapapa and Whanganui Rivers, periodic wetting and drying of the margins occurs along most of the length of these rivers when the flow contribution from uncontrolled tributaries vary. Because of these periodic natural fluctuations short duration reductions under SW Rules 3A and 3B will have no significant effect.

**SW Rule 4: permitted surface water takes**

This rule is necessary to implement SW Policy 1 to allow activities with minor effects to proceed without the need for a resource consent. Fifteen cubic metres per day is the maximum limit allowed as a permitted activity. If taken continuously, this equates to a rate of only 174 millilitres per second. This limit conforms to the General Authorisations which have been in force throughout parts of the Manawatu-Wanganui Region since 1970 and which were provided for in the Transitional Regional Plan. The Council has no evidence that these abstractions are having any adverse effects on the environment. These activities will be re-assessed for the review of this Plan.

**SW Rule 5: all other surface water takes**

This rule is necessary to implement SW Policy 1 to regulate activities that have the potential to cause any adverse effect on the environment that is more than minor. The Council does not have sufficient information at this time to provide a greater level of certainty by classifying any activities in any rivers or reaches of rivers as Controlled Activities.

**SW Rule 6: use of heat or energy from surface water**

This rule is necessary to implement SW Policy 1 to allow activities with minor effects to proceed without the need for a resource consent. Any use of heat or energy from surface water requires a water permit for the taking, damming or diverting of water; and/or land use permits for disturbing the bed or placing structures in, on, over or under the bed of a river, unless allowed by a rule in this Plan or the Regional Plan for Beds of Rivers and Lakes and Associated Activities. Any effects associated with the use of heat or energy will be adequately avoided, remedied or mitigated by conditions in the relevant rule, or on the water permit or land use consent. There are no unique adverse effects associated with the use of water that need to be controlled by additional conditions in this rule. There is no recorded use of geothermal surface water in this Region.

**SW Rule 7: small dams in artificial watercourses**

This rule is necessary to implement SW Policy 1 to allow activities with minor effects to proceed without the need for a resource consent. The effects of damming drains and artificial watercourses relate only to safety, flooding, and avoiding significant changes in surface water and groundwater levels nearby. A maximum area size has been included instead of a condition specifying a maximum volume because area quantities are easier to monitor and measure, and provide greater certainty to the community.

**SW Rule 8: diverting water from wetlands**

This rule is necessary to recognise and provide for the protection of wetlands from inappropriate use. Adverse effects associated with draining wetlands are identified in SW Issue 3. Loss of wetland habitat was identified as an issue of regional significance in the Regional Policy Statement for Manawatu-Wanganui (Issue LRW3), which recommends that remnant areas are identified and protected. As a matter of national importance the Council must protect the natural character of wetlands from inappropriate use when it is exercising its functions relating to the control of the range, or rate of change, of levels or flows of water (see Section 6 of the Act).

**SW Rule 9: diverting water except from wetlands, lakes or rivers**

This rule is necessary to provide certainty to resource users in the Region. All diversions of water are restricted under Section 14. In accordance with SW Policy 1, these restrictions have been deregulated to the extent necessary to control the potential effects of the activity. Diversions of water in rivers and lakes are managed by rules in the Regional Plan for Beds of Rivers and Lakes and Associated Activities.

**SW Rule 10: all other damming or diversion of surface water**

This rule is necessary to implement SW Policy 1 to regulate activities that have the potential to cause any adverse effect on the environment that is more than minor. Adverse effects associated with damming artificial watercourses are identified in SW Issue 2.

**SW Rule 11: established damming and diversion within an artificial watercourse**

This rule provides for established damming and diversion within an artificial watercourse as a controlled activity. Many of these established activities have been present in the Region's artificial watercourses for long periods. It is appropriate that the Plan provides certainty that established damming and diverting can continue subject to conditions. This controlled rule has been adopted because operational requirements may need to change to provide for other uses.

### 20.5 Reasons for adopting the non-regulatory method

**SW Method 1 - Wetland inventory**

The Council is committed to completing a wetland inventory of the Region as part of the implementation of the Land and Riparian Management Strategy. A critical step to addressing significant wetlands, other than those identified in the Regional Policy Statement, is to assess the location and types of wetlands that exist in the Region. With this knowledge, the Council can then assess the values of those wetlands, and the management practices that can have adverse effects on them.

**SW Method 2 – Site Investigations**

SW Method 2 allows Council time to programme for the necessary works required to undertake a possible investigation on alternative or additional monitoring sites located closer to the points of take on the Whanganui and Whakapapa Rivers.

**SW Method 3 – Wetland Enhancement**

The Regional Council recognises that drains, and drainage generally, have historically converted extensive areas of wetland to farmland, which continues to have an adverse environmental effect on water levels, wetlands and biodiversity. However, the Regional Council also acknowledges that these drains play an important role in the social and economic well-being of the regional community through maintaining the productive landscape. The adverse effects of these drains cannot be avoided, by the nature of the activity. To mitigate these effects the Regional Council will provide funding to the He Tini Awa Trust to restore, preserve, enhance and create wetlands in the Manawatu-Wanganui Region. As there is significant community benefit from this work, funding will be provided through the general rate.

## 21. Environmental Results Anticipated

The following environmental results are anticipated from the implementation of the policies in this Chapter:

a. Aquatic habitat in rivers will be safeguarded from the effects of human induced low flows.

b. The flow carrying capacity of drainage channels will not be exceeded by the diversion of water.

c. The existing natural character of wetlands in the Region will be protected from the effects of drainage.

# CHAPTER FIVE
# GROUNDWATER - TAKING, USING, DAMMING AND DIVERTING

## 22. Scope of this Chapter

Chapter Five contains the regulatory framework for all groundwater activities that are restricted under Section 14 of the Act. Section 14 restricts the taking, using, damming and diverting of water, including all surface water and all groundwater. For the purposes of this Plan, groundwater is defined as "subsurface water that occurs beneath the water table in geologic formations that are fully saturated" (see Glossary). There is no recorded use of geothermal groundwater in the Region.

Activities managed in this Chapter are:

- the abstraction of groundwater throughout the Region (Section 14(1)(a) of the Act); and
- the damming and diversion of groundwater (Section 14(1)(a) of the Act); and
- the use of groundwater throughout the Region, specifically the use of heat or energy from water (Section 14(1)(b) of the Act).

Activities **not** managed in this Chapter are:

- land uses that may affect groundwater quality (discharges to land are managed in Chapter Two); and
- taking, using, damming and diverting of surface water (damming and diverting of water in rivers and lakes are managed by provisions in the Regional Plan for Beds of Rivers and Lakes and Associated Activities, other surface water activities restricted by Section 14 are managed by provisions in Chapter Four).

## 23. Issues

The effects associated with taking, using, damming and diverting groundwater are described in the Background Report to this Plan. In accordance with those effects, and issues identified in the Regional Policy Statement for Manawatu-Wanganui, the Council identified three issues to be addressed in this Plan.

**GW Issue 1 - Declining groundwater levels**

Cumulative decline of groundwater levels occurs when more groundwater is abstracted from an aquifer than is naturally replenished. Groundwater levels either reach a new equilibrium (at a lower groundwater level) or continue to

decline. A cumulative decline occurred in the early 1980s in the 'medium confined aquifer' at Whakarongo, near Palmerston North. Groundwater levels there have now stabilised at a new level, about three metres below the previous level.

A localised but more conspicuous effect of groundwater abstraction is the drawdown effect, where water levels decline in bores near the abstraction. This is called 'interference' and can cause decreased yield in the nearby bores.

Declining groundwater levels may cause changes in groundwater quality. Causes of undesired groundwater quality change are seawater intrusion and mixing of different quality groundwater. Seawater intrusion is not a significant problem in the Region because, except in Wanganui, there are few groundwater abstractions in coastal areas.

Adverse effects caused by the mixing of different groundwater is strongly suspected in some areas of the Region. Even small changes in groundwater levels can cause mixing of groundwater or the modification of natural groundwater flow paths. Changes in groundwater levels can be caused by continuously discharging artesian bores.

**GW Issue 2 - Adverse effects from dammed or diverted groundwater**

Groundwater can be dammed when retaining walls for banks or cliffs are built without adequate drainage. In this situation, water can build up behind the wall and eventually cause the wall to collapse and landslides to occur. For this reason, structures are designed to avoid damming groundwater flow.

Groundwater can be diverted when major earthworks, such as road cuttings through hillsides, are undertaken. The effects of these diversions are highly site specific, but can include lowering of nearby water levels and road washouts. Groundwater can also be diverted when large quantities of gravel are extracted (either land based or near rivers).

**GW Issue 3 - Groundwater abstractions in riparian areas that can adversely affect surface water quantity**

Abstractions of groundwater that is hydraulically connected to nearby surface waters, can affect the flows of the associated river reaches. In some cases hydraulic and water quality testing is necessary to establish whether surface water or groundwater is being exploited.

There are instances in the Region where the taking of shallow groundwater from areas close to surface waters can affect surface water levels. Large takes of groundwater from shallow "riparian" areas have the potential to cause adverse impacts on summer low flows. Of particular concern are the Ohau, Manakau, Tamaki and Kumeti catchments.

# 24. Objective

**GW Objective 1 Groundwater levels**

To avoid the long-term decline of groundwater levels.

# 25. Policies

## 25.1 Policies

The Council has adopted three policies to manage the taking, use, damming and diverting of groundwater in this Region. These policies address the issues identified in Section 23 above. They are implemented by methods given in Section 26.1 and 26.2 of the Plan, and provide guidance for the assessment of resource consent applications. The policies are explained in detail in Section 25.2. The reasons for adopting these policies, in terms of Section 32 of the Act, are given in Section 25.3.

**GW Policy 1: Use of regional rules**

To manage the taking, use, damming and diverting of groundwater by adopting regional rules that:

a. permit all activities that have minor effects on the environment provided specified conditions are met; and

b. regulate those activities that have the potential to cause any adverse effect on the receiving environment that is more than minor; and where conditions to manage the activity need to be site-specific; and

c. prohibit any activities that have an adverse effect on the environment that cannot be adequately avoided, remedied or mitigated; and

d. contain measurable and enforceable conditions, standards and terms so that the community can undertake their activities with certainty.

**GW Policy 2: Matters to be considered for resource consent applications**

The Council will have particular regard to the following matters when considering resource consent applications for taking, using, damming or diverting groundwater:

a. the effects of the activity on:

   i. groundwater levels in nearby bores;
   ii. long term groundwater levels;

iii. water levels in rivers, lakes and wetlands;
iv. groundwater quality, including effects from saline intrusion or mixing of aquifers, and effects from the design of the abstraction device; and
v. changes in the natural groundwater flow path; and

b. the efficient use of the proposed water take; and

c. the knowledge of the particular resource; and

d. the social and economic well being and the health and safety of people and communities; and

e. for damming and diverting, whether the activity will increase the risk of flooding or landslide, or pose a risk to infrastructure.

**GW Policy 3: Maintaining water levels in the Whakarongo area**

To ensure that, where practicable, abstractions from new bores in the Whakarongo area are from different aquifers than existing abstractions from nearby bores.

## 25.2 Explanation of policies

These policies establish the regulatory and non-regulatory framework to avoid or mitigate adverse effects caused by taking, using, damming or diverting groundwater throughout the Region.

GW Policy 1 provides direction to adopt an effects-based approach, required for the adoption of regional rules by Section 68 (3) of the Act.

GW Policy 2 provides guidance on matters to which the Council will have particular regard when assessing any resource consent application to undertake an activity restricted by a rule in this Plan. These matters will be considered where the Council has the discretion to grant or refuse an application. The matters addressed in this Policy have been identified in the Background Report and in the groundwater issues of this Plan. This Policy is consistent with the requirements of Section 104 of the Act, and Policies 14.1, 14.2 and 14.3 of the Regional Policy Statement for Manawatu-Wanganui. This Policy is subject to Part II (Sections 5 to 8) of the Act, meaning that Part II has precedence over this Policy.

The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

GW Policy 3 provides guidance for the granting of any water permit in the Whakarongo area. Groundwater levels in this area declined during the 1980s because a significant number of large abstractors were drawing from the same aquifer. The Council is now managing the aquifers in this area by encouraging new bores to a deeper or shallower aquifer than those being used by bores nearby.

### 25.3 Reasons for adopting the objective and policies

The GW Objective has been adopted to address the issues associated with groundwater in this Region. In adopting the objective, the Council has had particular regard to the efficient use of natural resources (Section 7 of the Act).

GW Policy 1 has been adopted to ensure that any taking, using, damming or diverting of groundwater is managed according to the level of adverse effect the activity may have on the environment. This policy is necessary to achieve the GW Objective of this Chapter so that long-term groundwater decline does not occur within the Region.

GW Policy 2 has been adopted to address GW Issues 1 and 2, and to assist the Council in achieving its function of controlling the taking, use, damming and diversion of water in any waterbody. This Plan must provide effective guidance for assessing resource consent applications. The matters included in this policy are consistent with the matters in Section 104 of the Act, specific issues of concern relating to groundwater use in this Region, and matters in the Regional Policy Statement for Manawatu-Wanganui. In adopting this policy, the Council is recognising and providing for matters of national importance as required by Section 6 of the Act, and has had particular regard to the matters in Section 7, in particular, the efficient use of natural resources.

GW Policy 3 has been adopted to achieve the GW Objective of this Chapter. There is a higher risk that there will be long-term decline in the groundwater levels in the middle aquifer of the Whakarongo area than anywhere else in the Region.

## 26. Methods of Implementation

### 26.1 Rules for groundwater throughout the Region

#### GW Rule 1: Minor groundwater takes

Any abstraction and use of 50 cubic metres or less per day of groundwater

is a **Permitted Activity** provided

a. the abstraction is taken from a bore no closer than 50 metres to any other bore; and

b. the records from the bore drilling are forwarded to the Regional Council; and

c. where the bore penetrates a confined aquifer, there is a means to control the abstracted flow, and the abstracted water is not allowed to run to waste.

**Advisory Note**
The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

**Explanation**
This rule allows small abstractions of groundwater to allow people to provide for their domestic needs and for the needs of stock. The conditions in this Rule are to ensure that any effects associated with the abstraction are no more than minor. If the abstractor cannot show that the abstraction per bore is no more than 50 cubic metres per day a consent shall be required in accordance with GW Rule 2. Condition c. has been adopted so that artesian bores do not flow to waste.

**GW Rule 2: Groundwater test bores**

Any abstraction for the purpose of testing groundwater bores to evaluate aquifer hydraulic characteristics and water quality

is a **Permitted Activity** provided

a. the abstraction rate does not exceed 60 l/s; and

b. the duration of the abstraction is no longer than 5 days; and

c. the records from the test, including flow rate, water level and the time these measurements were taken, are forwarded to the Regional Council; and

d. where the discharge is to water the discharge does not

   i. increase receiving water temperature by more than 3°C; or
   ii. result in a change in horizontal visibility[37] greater than 30%; or
   iii. cause erosion of the bed of the waterbody; or
   iv. alter the natural course of the waterbody; and

[37] Horizontal visibility is defined as the horizontal sighting range of a 200mm black disc. Change refers to changes in time as well as space.

e. where the discharge is to land the discharge shall not increase land instability or the risk of erosion; and

f. the discharge does not cause flooding on adjoining properties without the property owner's written permission; and

g. the bore is covered and secured following test completion.

**Explanation**
This rule applies to the testing of groundwater to evaluate aquifer hydraulic characteristics. The conditions in this rule are to ensure that any effects associated with the bore test are no more than minor. Conditions d. through to f. concern the effects on the receiving environment caused by the discharge. If the activity does not meet one or more of the conditions in the rule then a resource consent under GW Rule 3 is required.

**GW Rule 3: All other groundwater takes**

3.1 Except as provided for in GW Rules 1 and 2, any abstraction and use of groundwater

is a **Discretionary Activity.**

3.2 The information required with consent applications for these activities is set out in section 34.3.5 of this Plan.

**Advisory Note**
The Regional Council is undertaking a comprehensive review of how surface water and groundwater resources should be managed and allocated in the future. This review involves scientific modelling and community consultation. Any policy changes resulting from this project will be introduced into the Plan by way of a Plan Change. The Water Allocation Project has a timeframe of 3-5 years.

**Explanation**
This rule applies to groundwater abstractions of amounts greater than 50 cubic metres per day. This applies regardless of whether the water is for people to provide for their domestic needs or for the needs of stock.

**GW Rule 4: Damming groundwater**

4.1 Any damming of groundwater

is a **Discretionary Activity.**

4.2 The information required with consent applications for these activities is set out in section 34.3.6 of this Plan.

**Explanation**
This rule applies to activities that cause groundwater to be dammed, for example, retaining walls without adequate drainage that extend below the water table. This rule also applies to the intentional damming of groundwater, for example, for hydro-electric power generation. The damming of water in artificial watercourses is provided by SW Rule 7 of this Plan.

**GW Rule 5: Minor diversions of groundwater**

Any diversion of groundwater

is a **Permitted Activity** provided

a. the diversion does not cause lowering of surface water levels in any lake, river or wetland; and

b. the diversion does not cause lowering of groundwater levels on neighbouring properties; and

c. the diversion does not cause any erosion or flooding on neighbouring properties.

**Explanation**
This rule applies to activities that cause groundwater to be diverted, for example, drains behind retaining walls.

**GW Rule 6: All other diversions of groundwater**

6.1 Except as provided for by GW Rule 5, any diversion of groundwater

is a **Discretionary Activity.**

6.2 The information required with consent applications for these activities is set out in section 34.3.6 of this Plan.

**Explanation**
This rule applies to activities that cause groundwater to be diverted where the conditions in GW Rule 5 cannot be met.

**GW Rule 7: Using heat or energy from groundwater**

7.1 Any use of heat or energy from groundwater

is a **Discretionary Activity.**

7.2 The information required with consent applications for these activities is set out in section 34.3.6 of this Plan.

**Explanation**
There is no recorded use of geothermal groundwater in this Region. This rule has been included for completeness to provide for Section 14 (1)(b) of the Act.

## 26.2 Non-regulatory method

### GW Method 1 - Efficient groundwater use

The Regional Council will encourage the efficient use of water taken from underground.

### GW Method 2 – New Zealand Drilling Standards

The Regional Council will promote and encourage adherence to New Zealand Drilling Standards as they relate to the drilling of soil and rock, the construction, testing and maintenance of bores, the decommissioning of drilled holes and bores, and record keeping.

## 26.3 Reasons for adopting each of the regional rules

### GW Rule 1: minor groundwater takes

This rule is necessary to implement GW Policy 1 to allow activities with minor effects to proceed without the need for a resource consent. Condition a. is necessary to avoid interference with other bores. Condition b. enables the Council to keep records of groundwater use, and is more appropriate than requiring resource consents for the drilling of the bore. Condition c. is necessary to avoid groundwater running to waste. The Council is satisfied that restricting bore water overflow is more efficient than attempting to maintain minimum flows in an aquifer through conditions on resource consents.

Fifty cubic metres per day is the maximum limit allowed as a permitted activity. If taken continuously, this equates to a rate of only 0.58 litres per second. This limit is greater than that of the General Authorisations which were in force throughout parts of the Manawatu-Wanganui Region since 1970 and which were provided for in the Transitional Regional Plan. The Council has records of groundwater levels dating from the early 1970s and is satisfied that the cumulative effects of these abstractions will not cause any significant decline in groundwater levels in the Region. This rule provides for taking of water that is allowed by Section 14(3)(b) of the Act.

### GW Rule 2: groundwater test bores

This rule is necessary to implement GW Policy 1.a to allow activities with minor effects to proceed without the need for a resource consent. As part of the process of identifying potential bore sites for future abstraction purposes, test bores are often drilled to determine groundwater quality and quantity

within an aquifer. Performance conditions a. and b. indicate the temporary nature of the activity and are necessary to ensure that the effects of the activity are minor. Condition c. means that the Council receives data and information about the groundwater resource in the Region. Conditions d. through to f. concern the effects on the receiving environment caused by the discharge.

**GW Rule 3: all other groundwater takes**

This rule is necessary to implement GW Policy 1 to restrict activities where the effects may be more than minor. Abstractions for volumes of groundwater in quantities greater than 50 cubic metres per day require a site-specific assessment.

**GW Rule 4: damming groundwater**

This rule is necessary to implement GW Policy 1 to restrict activities where the effects may be more than minor. As identified in GW Issue 2, unintentional damming of groundwater behind retaining walls can cause significant adverse effects. Any damming of groundwater for the purpose of hydro-electric power generation requires site-specific assessment.

**GW Rule 5: minor diversions of groundwater**

This rule is necessary to implement GW Policy 1 to allow activities with minor effects to proceed without the need for a resource consent. This rule also avoids unnecessary over-regulation between the jurisdiction of the Regional Council under the Act, and the jurisdiction of district councils under the Building Act. Structures, such as retaining walls that include drains to divert groundwater from behind the wall, already require building permits. The conditions in this rule are sufficient to avoid adverse environmental effects that may arise from the diversion.

**GW Rule 6: all other diversions of groundwater**

This rule is necessary to implement GW Policy 1 to restrict activities where the effects may be more than minor. Any groundwater diversion that does not meet the conditions in GW Rule 5 has the potential to cause adverse effects that are more than minor.

**GW Rule 7: using heat or energy from groundwater**

This rule is necessary to implement GW Policy 1 to restrict activities where the effects may be more than minor. There is no recorded use of geothermal groundwater in the Region. Should any geothermal groundwater be discovered, it will require site-specific management.

### 26.4 Reason for adopting the non-regulatory method

**GW Method 1 - efficient groundwater use**

The Regional Council considers that the provision of information and education on efficient groundwater use is more appropriate than regulation as a means to encourage the efficient use of the groundwater resource. Issues such as ensuring leaking or overflowing bores are repaired to prevent wastage; and encouraging water efficient irrigation practices can reduce the adverse effects associated with inefficient groundwater use. This method will be implemented through provisions contained in the Land and Riparian Management Strategy.

**GW Method 2 – New Zealand Drilling Standards**

GW Method 2 recognises New Zealand Drilling Standards as they relate to the drilling of soil and rock, the construction, testing and maintenance of bores and the decommissioning of drilled holes and bores and record keeping. Council supports New Zealand Drilling Standards as setting out the minimum national environmental requirements necessary to protect the groundwater resource.

## 27. Environmental Results Anticipated

The following environmental results are anticipated from the implementation of the policies in this Chapter:

a. Groundwater levels will not decline below existing levels.

b. Dammed or diverted groundwater will not cause erosion or significant changes in groundwater levels.

# CHAPTER SIX
# LAND MANAGEMENT

## 28. Scope of this Chapter

Chapter Six contains the regulatory framework for those land uses that cause accelerated soil erosion. The activities specified in this Chapter are restricted under Section 9 of the Act if they contravene a rule in a regional plan. Activities specifically provided for are:

- soil disturbance;
- vegetation clearance;
- soil quality; and
- riparian management.

Activities **not** provided for in this Chapter are:

- discharges of contaminants to land (these are controlled by provisions in Chapter Two of this Plan);
- activities in the coastal marine area (these are controlled by provisions in the Regional Coastal Plan);
- activities in the beds of rivers and lakes (these are controlled by provisions in the Regional Plan for Beds of Rivers and Lakes and Associated Activities).

The Regional Council is responsible for controlling the use of land for soil conservation purposes (Section 30(1)(c)(i) of the Act). This also contributes to the maintenance of water quality and the avoidance or mitigation of natural hazard effects. The District Council is responsible for controlling the use of land particularly relating to subdivision.

## 29. Issues

The adverse effects of accelerated soil erosion are described in the Background Report to this Plan. In accordance with the Background Report and the Regional Policy Statement for Manawatu-Wanganui, the Council identified five issues to be addressed in this Chapter of the Plan.

**LM Issue 1 - Accelerated erosion on vulnerable land**

The Region contains over 900,000 hectares of hill country susceptible to soil slip erosion. Of this nearly 400,000 hectares is susceptible to severe erosion. These areas are typically steep slopes with soft sedimentary soils.

The Manawatu-Wanganui Region contains widespread erosion. Some erosion occurs naturally and is the result of long term geological processes that shape the land. Accelerated erosion (that is, erosion happening faster than the

natural rate) is always undesirable and is often caused by physical disturbance of the soil. Disturbance includes that caused by activities such as excavation, roading and tracking. Accelerated erosion also occurs in association with land management practices such as vegetation clearance and subsequent grazing on erosion-prone land, cultivation near watercourses, and cultivation of steep slopes.

Local accelerated erosion can be triggered by soil disturbance from earthworks, roading and tracking, management practices such as land clearance by root-raking, and from cultivation. A small amount of disturbance can create a large amount of erosion. Forest clearance can create erosion, through loss of protection from the forest canopy and the roots, although most of the adverse effects from forest clearance arise from the tracks made for heavy vehicles, rather than the clearance itself. By removing vegetation from steep hill slopes, the soil loses the binding capacity of the roots. This creates a 'window' where the soil is susceptible to erosion, until the roots of new vegetation take hold. Older indigenous forest provides the best erosion protection for steep slopes and should be left to anchor the soil. Clearance of such areas for conversion to forestry or pasture may result in cyclic or ongoing erosion.

Clearing vegetation for conversion to pasture is now a rare activity. Clearing scrub and indigenous bush for planting of exotic production species is more likely. Factors that make land especially vulnerable to erosion following vegetation clearance are steepness, and erodible soil types such as unconsolidated sedimentary soils.

Soil erosion can cause severe financial loss through damage to roads, buildings, fences, dams, bridges and culverts. Measures taken to prevent or reduce accelerated erosion in the Region will contribute to a reduction in the overall costs of facility maintenance.

A decline in soil productivity persists for a long time (decades), after soil is lost through erosion. The cumulative effect of erosion is significant for the Region's total productivity. Controlling soil loss resulting from erosion is fundamental to achieving sustainable land use.

### LM Issue 2 - Wind erosion in sand country

The Region has 2,200 hectares of coastal foredunes along the west coast[38], that extend for an arc of 100 kilometres. This area acts as the first line of protection against the prevailing wind and wind-borne sand from the beach. Maintaining foredune stability helps to prevent dunes drifting inland. Some movement of the foredune occurs naturally, with erosion or aggradation of the coastline. Stabilising vegetation found on the foredune and inland dunes is particularly sensitive to human activities such as vehicle and foot traffic. Any disturbance of this vegetation allows wind to displace sand and affects habitats and coastal biodiversity. Natural re-growth of affected vegetation may be slow.

[38] There are no significant sand dune formations on the east coast of this Region.

The Region contains 79,000 hectares of sand country, mainly used for pastoral farmland or exotic forestry. Light sand dune soils become highly susceptible to wind erosion if the vegetative cover is removed. Livestock farming, especially with beef cattle, is the main cause of erosion in light sand soils. Activities that disturb soil, such as those associated with forest harvesting, tracking, and cultivation can also accelerate wind erosion in lighter sand soils. Most landowners have adopted appropriate land management practices, such as immediate replanting following forest harvesting, fencing to permit differential grazing of dunes and plains, provision of sufficient shelterbelts, and minimal tillage cultivation techniques. Therefore, at present the adverse effects from unsustainable management of these soils occur only in isolated instances.

### LM Issue 3 - Degraded soil quality

The Region contains many soils that are used for intensive agriculture, and these soils are vulnerable to progressive deterioration if not appropriately managed. Loss of the productive capability of soil occurs in various ways, generally referred to as "breakdown of soil structure". The soil must do more than contain essential nutrients. The ideal soil structure must allow both air and water to permeate, and the soil must support a varied range of organisms, and biological and chemical processes.

Research[39] shows localised instances in the Region, such as at Kairanga, where soil health has deteriorated substantially in just a few years. The result is higher levels of inputs being required and lower crop yields. Degraded soil quality is therefore a site specific issue. Further investigation is needed to determine the extent of the issue in this Region.

### LM Issue 4 - Degraded surface water quality and aquatic habitats

Erosion mobilises sediment that can enter surface water. Research findings and experience in the Region indicate that sediment creates significant adverse effects on the aquatic environment. Such effects include making riverbeds unsuitable for fish spawning, effects on in-stream habitat for invertebrates, reductions in water clarity affecting fish behaviour, and potential reductions in amenity value.

The cause and effect relationships between sediment, water clarity and effects on the life-supporting capacity and amenity values of water are complex. There is a need to determine what the natural levels of sediment are, the levels of sediment that ecosystems can cope with before the life-supporting capability is threatened, and the contribution made by the range of different sources of sediment.

(Refer also to Chapter Two, DL Issue 2)

[39] T G Shepherd "Sustainable soil-crop management and its implications for grain growers". International Conference on Sustainable Land Management, Napier, 1991

### LM Issue 5 - Degraded riparian margins and wetland habitat

Riparian margins are unique areas of land that exert a number of direct influences on water. Vegetation in riparian margins filters contaminants (including nitrates) in runoff from surrounding land, while providing shade for aquatic habitats and improving biodiversity. Riparian vegetation also provides bank stability, thereby reducing the effects of soil erosion on water and in-stream habitat quality.

Degraded riparian margins are caused by the clearing of riparian vegetation, stock grazing, and the introduction of weeds and pests.

In this Region riparian margins have been extensively modified by land development. Little riparian margin remains in its original state, apart from in reserves, and forest and national parks. No systematic management of riparian areas in the whole Region has been undertaken yet.

Land management practices can adversely impact on existing wetlands through stock access, sedimentation, forestry (by altering wetland hydrology) and plant pest invasion. Thus the integrity of existing wetlands is threatened by direct drainage (refer SW Issue 3) and land management practices.

## 30. Objectives

### LM Objective 1 Accelerated soil erosion

To avoid accelerated soil erosion on vulnerable land.

### LM Objective 2 Surface water quality

To reduce sediment, bacteria and nutrients in runoff to lakes, rivers and wetlands.

(Refer also to Chapter Two, DL Objective 3)

### LM Objective 3 Soil quality

To avoid long-term soil quality degradation.

(Refer also to Chapter Two, DL Objective 4)

### LM Objective 4 Riparian margins

To protect and enhance riparian margins.

# 31. Policies

## 31.1 Policies

The Council has adopted four policies for land management in this Region. These policies will achieve the objectives adopted in Section 30 above. They are implemented by methods given in Section 32 of the Plan, and provide guidance for the assessment of resource consent applications. The policies are explained in detail in Section 31.2. The reasons for adopting these policies, in terms of Section 32 of the Act, are given in Section 31.3.

**LM Policy 1: Use of regional rules**

To manage soil disturbance and vegetation clearance that may cause accelerated erosion and degraded water quality by adopting regional rules that:

a. permit all activities that have minor effects on the environment provided specified conditions are met; and

b. regulate those activities that have the potential to cause adverse effects on the receiving environment that are more than minor, and where conditions to manage the activity need to be site-specific; and

c. contain measurable and enforceable conditions, standards and terms so that the community can undertake their activities with certainty.

**LM Policy 2: Matters to be considered for resource consent applications**

The Council will have particular regard to the following matters when considering resource consent applications for soil disturbance and vegetation clearance:

a. the effects of the activity on:

   i. soil erosion;
   ii. control of water runoff on the site;
   iii. aquatic ecosystems;
   iv. water quality in rivers, lakes and wetlands, in particular the contribution of the activity to sediment, bacteria and nutrient levels in the river, lake or wetland by overland runoff;
   v. air quality, in particular adverse effects from dust;
   vi. amenity values;
   vii. any specified value associated with any feature of regional significance identified in the Regional Policy Statement for Manawatu-Wanganui; and
   viii. the natural character of rivers, lakes and wetlands; and

b. the nature of the activity with regard to tangata whenua concerns, and the effect of the activity on mahinga kai, waahi tapu, marae and other resources or places of significance to tangata whenua; and

c. the proposed times and seasons of operation; and

d. the outcome of consultation between the applicant and affected parties; and

e. any relevant code of practice and any management and maintenance systems.

**LM Policy 3: Use of Section 17 enforcement provisions**

To monitor land management practices in the Region and, where appropriate, to use general enforcement powers under Section 17 of the Act to avoid, remedy or mitigate significant adverse effects on the environment resulting from land management activities.

**LM Policy 4: Use of non-regulatory methods for resource management**

To develop and adopt formal non-regulatory strategies for soil conservation and the effects of land use on water quality.

(Refer also to Chapter Two, DL Objectives 2 and 3; and DL Policy 4)

## 31.2 Explanations of the policies

These policies establish the regulatory and non-regulatory framework to achieve sustainable land management in the Region.

LM Policy 1 provides direction to adopt an effects-based approach, required for the adoption of regional rules by Section 68 (3) of the Act.

LM Policy 2 provides guidance on matters which the Council will have particular regard to when assessing any resource consent application to undertake an activity restricted by a rule in this Plan. These matters will be considered where the Council has the discretion to grant or refuse an application.

LM Policy 3 has been adopted to emphasise that the issues of concern to the Council are greater than those targeted by regulations alone. Section 17 of the Resource Management Act can be used by the Council when significant adverse effects have occurred or are likely.

LM Policy 4 has been adopted to provide guidance for the development of non-regulatory methods to achieve environmental outcomes in land management. This policy links the Land and Water Regional Plan with the Land and Riparian Management Strategy.

## 31.3 Reasons for adopting the objectives and policies

The objectives have been adopted to address the issues associated with the sustainable use of the soil resource. The Regional Policy Statement for Manawatu-Wanganui promotes sustainable land use practices. All objectives and policies are consistent with Objective 5 in the Regional Policy Statement "To achieve sustainable land use", and its supporting policies and methods. The objectives recognise the value of the soil as a regional resource affecting present and future generations.

LM Policy 1 has been adopted to ensure that soil disturbance and vegetation clearance are managed according to the significance of any adverse effect they may have on the environment. A framework of regional rules with appropriate standards clearly informs the community about the adverse effects that must be avoided for land management to be sustainable. There are many small-scale activities whose effects, including cumulative effects, can be effectively and efficiently managed by non-regulatory methods and/or compliance with the specified performance conditions.

LM Policy 2 has been adopted to help achieve LM Objectives 1 and 2, and to assist the Council in achieving its functions relating to soil conservation and water quality. This Plan must provide effective guidance for assessing resource consent applications.

LM Policy 3 has been adopted to help achieve LM Objectives 1, 2 and 3. LM Policy 3 has been adopted to emphasise that the issues of concern to the Council are wider than those targeted by the regulatory methods adopted. Some issues are best dealt with by non-regulatory methods, but the worst cases of inappropriate land management can have severe effects that need remedial action. An example is inundation of property by sand due to wind erosion. The Council is prepared to consider enforcement action on the merits of the case, and not only in those areas that have been regulated.

LM Policy 4 has been adopted to help achieve LM Objectives 3 and 4. The Policy will assist the Council in achieving its functions in areas where regulation will not be either effective or practical. The main way non-regulatory methods will be developed and presented is through the use of strategies. Strategies are documents that set policies for the Council and commit its staff and resources, and encourage the regional community to undertake specified actions for achieving agreed environmental objectives. The Council considers strategies are more effective where:

- community ownership and buy-in are vital for success;
- non-point source impacts on the environment make specification of property rights (i.e. regulation) impractical; and
- cause and effect relationships are not clear.

# 32. Methods of Implementation

## 32.1 Rules for vegetation clearance and soil disturbance

These rules apply to all land in the Region except land in the coastal marine area, and the beds of lakes and rivers. Land in the coastal marine area is covered by the Regional Coastal Plan, and land in the beds of rivers and lakes by the Regional Plan for Beds of Rivers and Lakes and Associated Activities.

**LM Rule 1: Coastal foredunes**

1.1 On any land on the west coast of the Region between the coastal marine area and the inland margin of the coastal foredune, vegetation clearance or soil disturbance

is a **Discretionary Activity**.

1.2 The information required with land use consent applications for this activity is set out in Section 34.4.1 of this Plan.

**Advisory Note**
Please check with your local district council for any additional requirements contained within their district plans relating to this activity.

**Explanation**
For the purpose of this Rule, coastal foredune means the strip of land between the coastal marine area and a line roughly parallel with the beach, extending 200 metres inland of the first line of vegetation, south of the Whanganui River. See Figure 1 below for a diagram showing the coastal foredune area.

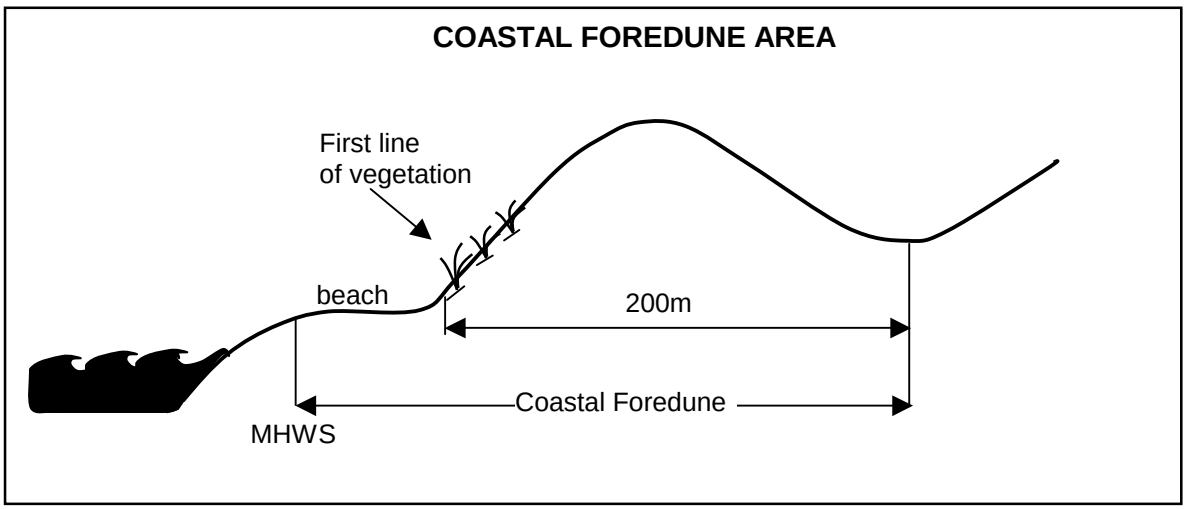



**Figure 1: Coastal Foredune Area**

The foredune itself is difficult to define precisely. Foredunes typically have a seaward slope, a crest and a landward (or lee) slope. Foredune height and width can vary considerably depending on the sand supply, the wind regime and the type and degree of vegetation cover.

The line of mean high water springs defines the boundary of the coastal marine area, covered by the Regional Coastal Plan.

LM Rule 1 applies to a defined strip of land. This strip may include urban sections and houses. The definition of soil disturbance does not include activities such as digging a garden or constructing a fence. However, the rule does mean that machinery cannot be used to reshape the foredune, or prepare a new building site, without a consent.

**LM Rule 2: Permitted Vegetation Clearance, Soil Disturbance and Cultivation**

Subject to LM Rule 1, vegetation clearance, soil disturbance and cultivation

is a **Permitted Activity** provided

a. the area of contiguous vegetation clearance, other than for the harvesting of plantation forest[40], does not exceed 2 hectares per annum; and

b. no vegetation clearance, other than the clearance of plantation forestry established prior to the date of this Plan becoming operative, occurs

   i. within 20 metres of any waterbody identified in Appendix 6; or
   ii. within 5 metres of any other permanently flowing river, or any other river with a bed width in excess of 2 metres, or any other lake or any other wetland; and

c. no cultivation shall occur within 5 metres of the bank of any waterbody identified in Appendix 6 or within 3 metres of the bank of any other permanently flowing river, or any river with a bed width in excess of 2 metres, or any lake or any wetland unless bunding, silt traps, interception drains or other alternative methods[41] to control runoff are installed prior to, and maintained during cultivation; and

d. no soil disturbance, except as provided for by condition c. above, shall occur within 5 metres of the bank of any permanently flowing river, or any river with a bed width in excess of 2 metres, or any lake or any wetland; and

40 There is no restriction on the size of plantation forest that can be harvested in any one year.

41 The Regional Plan for Beds of Rivers and Lakes and Associated Activities regulates the construction and placement of structures within the bed of a river, lake or wetland. Any alternative methods must also comply with the provisions of that Plan.

e. any area of bare ground (other than building sites, firebreaks, tracks, roads or forestry landings) is revegetated to protect from erosion as soon as practicable and no later than 18 months from the date of vegetation clearance or soil disturbance with species that provide equivalent land stabilisation; and

f. water run-off controls are installed and maintained for building sites, tracks, roads or forestry landing sites; and

g. batters, cuts and side castings are established by methods that prevent slumping; and

h. trees are felled away from any permanently flowing river, or any river with a bed width in excess of 2 metres, or any lake, or any wetland other than where this would endanger the health and safety of site workers; and

i. slash, soil or debris from any vegetation clearance, soil disturbance or cultivation is not directly deposited into any permanently flowing river, or any river with a bed width in excess of 2 metres, or any lake, or any wetland; or left in a position where it may avalanche down any slope; and

j. any pieces of slash greater than 10 cm stem diameter or greater than 2 m in length that enter any permanently flowing river, or any river with a bed width in excess of 2 metres, or any lake, or any wetland are removed; and

k. felled vegetation is not dragged through any permanently flowing river, or any river with a bed width in excess of 2 metres, or any lake, or any wetland.

**Advisory Note**
Please check with your local district council for any additional requirements contained within their district plans relating to this activity.

For free advice, please contact your local Land Management Officer at one of Horizons Regional Council's offices.

This rule does not restrict vegetation clearance or soil disturbance associated with an authorised river crossing.

**Explanation**
This rule applies to all vegetation clearance and soil disturbance (as defined in the Glossary) in the Region except on the coastal foredune. Vegetation clearance and soil disturbance on the coastal foredune is addressed in LM Rule 1. LM Rule 2 also applies to any soil disturbance (including roading, tracking or earthworks) associated with forest clearance.

Re-vegetation under condition c. may be with any form of vegetation, including grass, scrub or trees. To prevent future erosion care should be

taken to manage and protect young vegetation from animal browsing. Where vegetation was originally planted for erosion control purposes, re-vegetation should be undertaken in order to provide equivalent land stabilisation.

For the purpose of this rule "slash" means any branches, parts of trees or waste trees remaining as a result of vegetation clearance. For the purpose of this rule 'material' means any vegetative or soil matter resulting from this activity.

The following activities must be undertaken in accordance with the provisions of the Regional Plan for Beds of Rivers and Lakes and Associated Activities or a resource consent:

- Vegetation clearance within the bed of a river or lake;
- Any river crossings or structures in or on the bed of a river or lake; and
- Any activities involving the construction of culverts or soil disturbance in the bed of a river or lake.

Any activities involving the deposition of dust beyond the property boundary must be in accordance with the Regional Air Plan or a resource consent.

**LM Rule 3: Other Vegetation Clearance and Soil Disturbance**

3.1 Vegetation clearance and soil disturbance that cannot comply with one or more conditions of LM Rule 2

is a **Restricted Discretionary Activity.**

3.2 The Council restricts its discretion to:

a. the method and timing of the soil disturbance or vegetation clearance; and

b. measures required to minimise soil erosion; and

c. measures required to minimise adverse effects on water quality and quantity; and

d. measures required to avoid or mitigate natural hazards; and

e. duration of the consent; and

f. review of consent conditions; and

g. information and monitoring requirements; and

h. administration charges.

3.3 The information required with consent applications for this activity is set out in section 34.4.1 of this Plan.

**Advisory Note**
Please check with your local district council for any additional requirements contained within their district plans relating to this activity.

**Explanation**
This rule applies to soil disturbance and vegetation clearance activities that fail to meet one or more of the performance conditions specified in LM Rule 2.

## 32.2 Non-regulatory methods

### LM Method 1 - Land and Riparian Management Strategy

The Regional Council will implement, in consultation with other relevant agencies and resource users, the Land and Riparian Management Strategy. This Strategy:

- Promotes the appropriate management of land, and the enhancement or maintenance of soil quality;
- Promotes the appropriate management of discharges to land, particularly agricultural effluent and fertiliser applications, to avoid the adverse effects of leaching to surface and groundwater;
- Promotes land management practices that avoid, remedy or mitigate the adverse effects of accelerated erosion;
- Promotes the use of Council's soil conservation and environmental grant provisions;
- Promotes appropriate management of land on the margins of rivers and lakes, including wetlands;
- Promotes land management practices that avoid, remedy or mitigate the effects of erosion on the banks of lakes, and rivers;
- Promotes the use of riparian management methodologies to reduce the adverse effects of land use on water quality and in-stream habitat;
- Promotes the maintenance and restoration of riparian habitat; and
- Encourages the reduction of stock access into rivers and lakes.

### LM Method 2 - Environmental Education Programme

The Regional Council will prepare and implement an Environmental Education Programme. The Programme will:

- Identify environmental issues and target sectors for environmental education.

**LM Method 3 – Riparian Management Research**

The Regional Council will undertake research on the value(s) of rivers in this Region. This research will be completed within four years of this Plan becoming operative. The information will then be used to determine, in consultation with other agencies and interested parties, appropriate riparian setbacks.

**LM Method 4 – Information broker**

The Regional Council will act as an information broker providing information and expertise wherever possible on land management issues, including biodiversity. In fulfilling this role the Regional Council will liaise with District Councils, the Department of Conservation and other agencies in regard to the clearance of indigenous vegetation, as regulated by the operative district plans in the Region.

**LM Method 5 – Good practice guidelines**

The Regional Council will promote, in conjunction with the New Zealand Vegetable and Potato Growers Federation Inc, the Department of Conservation and Federated Farmers good practice guidelines for cultivation activities within the Region.

## 32.3 Reasons for adopting each of the regional rules

**LM Rule 1: coastal foredunes**

LM Rule 1 protects the coastal foredune from the adverse effects of soil disturbance or vegetation clearance. The coastal foredune is particularly vulnerable to disturbance. It is an area small in extent but important as the first stage of defence against wind erosion and inundation by blown sand of areas near the coast. It is unacceptable for this area to be removed or disturbed, say for the purpose of mineral extraction; however it is sometimes necessary to carry out significant relocation of sand to stabilise holes which can develop in the foredune and rapidly expand due to the funnelling effect of the wind. Making both vegetation clearance and soil disturbance a discretionary activity will ensure any disturbance is consistent with the objectives and policies of the Plan, and any adverse effects are avoided, remedied or mitigated.

**LM Rule 2: Vegetation clearance and soil disturbance**

LM Rule 2 is necessary to implement LM Policy 1.a. to allow activities with minor effects to proceed without the need for a resource consent. Vegetation clearance, including the harvesting of plantation forestry, is permitted provided specified performance conditions are met. Any forestry clearance that follows the New Zealand Forest Code of Practice issued by the Logging Industry Research Association (LIRA), is likely to meet the permitted activity

conditions. On some marginal hill country in the Region plantation forestry is a more appropriate land use than pastoral grazing. It, therefore, is important not to place unnecessary regulatory barriers in the way of forestry as a land use.

While LM Rule 2 permits soil disturbance, it is the responsibility of the resource user to ensure that any soil disturbance will not cause major instability of hill slopes or river banks. Expert geological or engineering advice should be sought for large projects. It is not practicable to identify all unstable land areas in the Region. Most slopes, however stable in their natural state, can be undermined by poorly planned excavation.

The Council will carry out further investigations and monitoring to determine the impact of the new regulatory regime on the incidence of erosion in the Region. If the provision of information about land stability is not sufficient to avoid or mitigate the adverse effects of the activity, then the approach that has been taken will need to be reviewed.

**LM Rule 3: Other vegetation clearance and soil disturbance**

LM Rule 3 defines activities that do not meet the standards in LM Rule 2 as a discretionary activity. This allows each case to be determined on its individual merits within the objectives and policies of the Plan.

## 32.4 Reasons for adopting the non-regulatory methods

**LM Method 1 - Land and riparian management strategy**

The issues identified in this Chapter include accelerated erosion triggered by soil disturbance and vegetation clearance, which are dealt with by the rules. There is also a great deal of accelerated erosion arising from farming practices. The Strategy draws together a wide range of non-regulatory methods to address this form of erosion. The Council already provides environmental grant assistance to approved projects as part of its existing soil conservation service. The Strategy considers the effectiveness of various forms of advice and assistance to landholders, and sets priorities and targets for various parts of the Region.

Soil quality is a major factor contributing to sustainable land use. The Council needs to know that effective monitoring of the soil resource is being carried out. This is a substantial task, and is likely to be achieved best by involving all interested parties: district councils, farmers, researchers, and other agencies in a co-operative approach of monitoring and data sharing. A strategy is the best, possibly the only, way of achieving the co-operation of such a large and diverse group.

Riparian margins in the Region are an important natural resource. They are the interface between land and water. Important values in riparian areas include protection from erosion, provision of habitat on both land and water,

water temperature control through shading, mitigation of effects on water from many aspects of land management, and amenity values.

Little information exists on the overall state of riparian areas in the Region, and there is no broad base for policy.

The Strategy is a policy document that provides a broad base policy in riparian management. The Strategy also identifies the issues and outlines actions that the Council will take, including future implementation.

**LM Method 2 - Environmental education programme**

The Council is committed to implementing an environmental education programme. The Council is satisfied that increasing public awareness of environmental issues and the actions proposed to deal with them, are a vital part of achieving improved environmental outcomes. The environmental education programme will be ongoing and will integrate all the Council's activities, including both regulatory and non-regulatory methods, under its regional plans.

The Council, in implementing the Environmental Education Programme, will be working with relevant agencies to ensure consistency in approach and to allow for collaboration where appropriate.

**LM Method 3 – Riparian Management Research**

The Regional Council needs to know what people value rivers for and the habitat values for each river or stream. This method allows this research to be carried out. This information will then be used to determine, in consultation with other agencies and interested parties, appropriate riparian setbacks. When completed, the results of this research will be included within Appendix 6 of the Plan by way of a plan change.

**LM Method 4 – Information broker**

The Regional Council collects information on land management and biodiversity issues as part of the Regional Monitoring Strategy and State of the Environment reporting. While the Regional Council is not always the principle regulatory agency for the clearance of indigenous vegetation clearance due to requirements in district plans, the Regional Council has expertise and information that can assist district councils.

**LM Method 5: Good practice guidelines**

The Regional Council wishes to promote and encourage good practice when cultivating land in the Region. This method allows the Council to work with agencies, such as New Zealand Vegetable and Potato Growers Federation Inc, the Department of Conservation and Federated Farmers to develop user friendly guidelines for cultivation promoting better management practices.

## 33. Environmental Results Anticipated

The following environmental results are anticipated from the implementation of the policies in this Chapter:

a. The amount of accelerated erosion occurring in the Region will be reduced to sustainable levels.

b. The impacts of activities on water and soil quality, and aquatic ecosystems will be reduced by improved land management practices, such as riparian management and appropriate use of fertiliser.

# CHAPTER SEVEN
# CONSENT INFORMATION REQUIREMENTS

## 34. Making an Application

### 34.1 Application forms and fees

Resource consents to undertake an activity restricted by a rule in this Plan must be obtained from the Manawatu-Wanganui Regional Council. Application forms are available from any office of the Council. Enquires and correspondence can be directed to the Team Leader, Consents, Manawatu-Wanganui Regional Council, Private Bag 11025, Palmerston North.

Section 36 of the Act provides for fixed charges or fees to be set for various administration and monitoring activities. The Regional Council sets and publishes these charges in its Annual Plan. Information about administrative charges for discharge permit and water permit applications can be obtained from any office of the Regional Council. The contact addresses for these offices are listed on the inside cover of this Plan.

All applicants for a resource consent to undertaken an activity managed under the provisions of this Plan must make their application in accordance with the procedures and requirements of the Act. The information that is required to be submitted with an application for a resource consent is set out in Section 88 and the Fourth Schedule of the Act. In particular, applications must include an assessment of effects on the environment in accordance with the requirements in Sections 34.2, 34.3 and 34.4 below.

### 34.2 Information required with discharge permit applications

Pursuant to Section 88(4) of the Act, the information submitted for a consent in accordance with the rules in this Plan shall include, where relevant, the information listed below. For applications for resource consents in accordance with either discretionary or non-complying rules in this Plan, the information requirements listed below should be treated as the minimum. Referral should also be made to the relevant policies of this Plan, particularly Policy 2 (in Chapters 2 - 6) when preparing resource consent applications.

#### 34.2.1 DL Rule 4. Discharges of agricultural effluent

Pursuant to Section 88 of the Act, applications for Controlled Activities described in DL Rule 4 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in

respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the discharge area, drains, watercourses and neighbouring properties; and

c. proof that the activity complies with the standards in DL Rule 4. This includes:

i. a description of the type of waste to be discharged;
ii. the distance from the disposal area to the nearest river, lake, natural wetland, artificial watercourse, public road, residence and neighbouring property;
iii. the land area (in square metres) that will be used for the discharge;
iv. the proposed hydraulic and nitrogen loading rates (these can be calculated from the Tables in Appendix 4 of this Plan); and
v. an explanation of how effluent ponding and runoff will be avoided; and

d. the proposed times and seasons of application; and

e. a description of any contingency measures available, such as storage ponds, to avoid the need to discharge during wet or windy periods; and

f. the written approval of every person who may be adversely affected by the activity.

### 34.2.2 DL Rule 5. Sewage sludge disposal

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in DL Rule 5 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the discharge area, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

i. the proximity of the proposed activity to any waahi tapu, river, artificial watercourse, lake, wetland, and any feature of regional significance specified in the Regional Policy Statement for Manawatu-Wanganui;
ii. the land area (in square metres) that will be used for the discharge;
iii. the topography and stability of the site;
iv. the soil types between the ground surface and groundwater;
v. depth to groundwater; and
vi. the proximity of neighbouring properties to the activity; and

d. the types of contaminants in the discharge, including typical concentrations of heavy metals and other contaminants that are persistent in the environment; and

e. the proposed hydraulic loading, nutrient loading and biochemical oxygen demand loading, and a description of the effects of these on the environment; and

f. the proposed times and seasons of application; and

g. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

i. matters of concern to tangata whenua;
ii. groundwater quality;
iii. surface water quality;
iv. soil quality and soil structure;
v. air quality, including effects of objectionable odour and aerosols that may contain micro-organisms;
vi. human health and amenity values; and
vii. any specified value associated with any feature of regional significance identified in the Regional Policy Statement for Manawatu-Wanganui; and

h. the type of treatment that the sludge has undergone, and the effectiveness of this treatment in destroying disease causing organisms likely to be present in the sludge; and

i. a description of any contingency measures available, such as storage ponds, to avoid the need to discharge during wet or windy periods; and

j. how the applicant intends to monitor the effects of the activity on the environment, in particular the effects on groundwater quality, surface water quality, soil quality, and air quality; and

k. a description of any alternative locations or methods of undertaking the activity; and

l. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.2.3 DL Rule 8. Discharge of Whey

Pursuant to Section 88 of the Act, applications for Controlled Activities described in DL Rule 8 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the discharge area, drains, watercourses and neighbouring properties; and

c. proof that the activity complies with the standards in DL Rule 8. This includes:

   i. a description of the type of waste to be discharged;
   ii. the distance from the disposal area to the nearest river, lake, wetland, artificial watercourse, public road, residence and neighbouring property;
   iii. the land area (in square metres) that will be used for the discharge; and
   iv. an explanation of how ponding and runoff will be avoided; and

d. the proposed times and seasons of application; and

e. a description of any contingency measures available, such as storage ponds, to avoid the need to discharge during wet or windy periods; and

f. the written approval of every person who may be adversely affected by the activity.

### 34.2.4 DL Rule 12. Solid waste disposal

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in DL Rule 12 of this Plan shall include the following information—

a. a statement specifying all other resource consents (including a permit to discharge landfill gas to air) that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the component parts of the proposed activity and the location of all discharge points, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

   i. the proximity of the proposed landfill to any waahi tapu, river, artificial watercourse, lake, wetland, and any feature of regional significance specified in the Regional Policy Statement for Manawatu-Wanganui;
   ii. the topography and stability of the site;
   iii. the soil types between the ground surface and groundwater;
   iv. depth to groundwater; and
   v. the proximity of neighbouring properties to the activity; and

d. a description of the effects of the discharge on the receiving environment; and

e. the measures that will be taken to control:

   i. access to the site;
   ii. materials deposited at the site;
   iii. stormwater from the site;
   iv. leachate from the site;
   v. windblown litter from the site and along access routes to the site;
   vi. odour;
   vii. vermin; and
   viii. landfill gas; and

f. an assessment of the risk to the environment from any hazardous substances; and

g. how the applicant intends to monitor the effects of the activity on the environment, in particular the effects on groundwater quality, surface water quality, and air quality; and

h. a description of any alternative locations or methods of undertaking the activity; and

i. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted; and

j. the intended length of time the landfill will be in operation, and the plans to manage closure of the landfill should it cease to be used for waste disposal during the period of the consent.

### 34.2.5 DL Rule 13. Discharge of industrial wastewater, sewage or sewage effluent

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in DL Rule 13 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the discharge area, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

   i. the proximity of the proposed activity to any waahi tapu, river, artificial watercourse, lake, wetland, and any feature of regional significance specified in the Regional Policy Statement for Manawatu-Wanganui;
   ii. the land area (in square metres) that will be used for the discharge;
   iii. the topography and stability of the site;
   iv. the soil types between the ground surface and groundwater;
   v. depth to groundwater; and
   vi. the proximity of neighbouring properties to the activity; and

d. the types of contaminants in the discharge, including typical concentrations of heavy metals and other contaminants that are persistent in the environment; and

e. the proposed rate of discharge of:

   i. wastewater (in cubic metres per day);
   ii. nitrogen (in kilograms per year); and
   iii. other contaminants

   and a description of the effects of these on the environment; and

f. the proposed times and seasons of application; and

g. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

   i. matters of concern to tangata whenua;
   ii. groundwater quality;
   iii. surface water quality;
   iv. soil quality and soil structure;

v. air quality, including effects of objectionable odour and aerosols that may contain micro-organisms;
vi. human health and amenity values; and
vii. any specified value associated with any feature of regional significance identified in the Regional Policy Statement for Manawatu-Wanganui; and

h. a description of any contingency measures available, such as storage ponds, to avoid the need to discharge during wet or windy periods; and

i. how the applicant intends to monitor the effects of the activity on the environment, in particular the effects on groundwater quality, surface water quality, soil quality, and air quality; and

j. a description of any alternative locations or methods of undertaking the activity; and

k. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.2.6 DL Rule 15. Discharges of stormwater to land deriving from industrial or trade premises

Pursuant to Section 88 of the Act, applications for Controlled Activities described in DL Rule 15 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the location of the stormwater outlets, including the map reference from NZMS map, scale 1:50,000 and plans of the site showing the location of the discharge area, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including;

i. soil type;
ii. vegetative cover of land;
iii. groundwater quality;
iv. proximity of surface water bodies and groundwater bores;
v. contour/slope of the discharge area;
vi. the sensitivity of the receiving environment to adverse effects; and
vii. whether the receiving environment is within a lake catchment, or drains into any river with high water quality; and

d. alternative methods of discharge considered; and

e. the measures that will be taken to

i. avoid or control discharges of contaminants into the stormwater system; and
ii. collect sediment and floating material in stormwater sumps; and

f. a description of the industrial and trade premises in the stormwater catchment, and programmes in place or proposed to avoid or mitigate the contamination of stormwater by hazardous substances.

### 34.2.7 DL Rule 18. Discharge of contaminants not otherwise provided for

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in DL Rule 18 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the discharge area, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

i. the proximity of the proposed activity to any waahi tapu, river, artificial watercourse, lake, wetland, and any feature of regional significance specified in the Regional Policy Statement for Manawatu-Wanganui;
ii. the land area (in square metres) that will be used for the discharge;
iii. the topography and stability of the site;
iv. the soil types between the ground surface and groundwater;
v. depth to groundwater; and
vi. the proximity of neighbouring properties to the activity; and

d. the types of contaminants in the discharge, including typical concentrations of heavy metals and other contaminants that are persistent in the environment; and

e. the proposed rate of discharge of:

i. wastewater (in cubic metres per day);
ii. nitrogen (in kilograms per year);

iii. biochemical oxygen demand (in kilograms per year);
iv. sodium (in kilograms per year); and
v. other contaminants

and a description of the effects of these on the environment; and

f. the proposed times and seasons of application; and

g. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

i. matters of concern to tangata whenua;
ii. groundwater quality;
iii. surface water quality;
iv. soil quality and soil structure;
v. air quality, including effects of objectionable odour and aerosols that may contain micro-organisms;
vi. human health and amenity values; and
vii. any specified value associated with any feature of regional significance identified in the Regional Policy Statement for Manawatu-Wanganui; and

h. a description of any contingency measures available, such as storage ponds, to avoid the need to discharge during wet or windy periods; and

i. how the applicant intends to monitor the effects of the activity on the environment, in particular the effects on groundwater quality, surface water quality, soil quality, and air quality; and

j. a description of any alternative locations or methods of undertaking the activity; and

k. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.2.8 DSW Rule 2. Discharges to lakes and natural wetlands

Pursuant to Section 88 of the Act, applications for Non-Complying Activities described in DSW Rule 2 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site

showing the location of the point of discharge, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

i. existing water quality, including trophic status;
ii. aquatic ecosystems;
iii. indigenous flora and fauna;
iv. other values, such as recreation and amenity; and
v. the sensitivity of the receiving environment to adverse effects; and

d. a description of the effects of the discharge on the receiving environment; and

e. the types of non-biological or persistent contaminant in the discharge, and whether the contaminant is likely to accumulate in the lake or wetland environment; and

f. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

i. matters of concern to tangata whenua;
ii. aquatic ecosystems;
iii. human health and amenity values; and
iv. any specified value associated with any feature of regional significance identified in the Regional Policy Statement for Manawatu-Wanganui; and

g. a description of any alternative methods of discharge, including discharge into any other receiving environment; and

h. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.2.9 DSW Rule 4. Discharges of stormwater to water deriving from industrial or trade premises

Pursuant to Section 88 of the Act, applications for Controlled Activities described in DSW Rule 4 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the location of the stormwater outlets, including the map reference from NZMS map, scale 1:50,000, and river that they discharge into; and

c. a description of the receiving environment including:

   i. existing water quality;
   ii. aquatic ecosystems;
   iii. other in-stream values, such as recreation and amenity;
   iv. the sensitivity of the receiving environment to adverse effects; and
   v. whether the receiving water is within a lake catchment, or drains into any river with higher water quality; and

d. an assessment of whether any of the following effects are likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):

   i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   ii. any conspicuous change in the colour or visual clarity;
   iii. any emission of objectionable odour;
   iv. the rendering of fresh water unsuitable for consumption by farm animals; or
   v. any significant adverse effects on aquatic life; and

e. the measures that will be taken to:

   i. avoid or control discharges into the stormwater system; and
   ii. collect material in stormwater sumps; and

f. a description of the industrial and trade premises in the stormwater catchment, and programmes in place or proposed to avoid or mitigate the contamination of stormwater by hazardous substances.

### 34.2.10 DSW Rule 6. Discharges to rivers, drains and other surface water

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in DSW Rule 6 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the point of discharge, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

i. existing water quality;
ii. aquatic ecosystems;
iii. other in-stream values, such as recreation and amenity;
iv. the sensitivity of the receiving environment to adverse effects; and
v. whether the receiving water is within a lake catchment, or drains into any river with higher water quality; and

d. an assessment of whether any of the following effects are likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):

i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
ii. any conspicuous change in the colour or visual clarity;
iii. any emission of objectionable odour;
iv. the rendering of fresh water unsuitable for consumption by farm animals; or
v. any significant adverse effects on aquatic life; and

e. the proposed discharge rate of

i. biochemical oxygen demand;
ii. suspended sediments;
iii. particulate organic matter;
iv. bacterial and other micro-biological contaminants;
v. dissolved reactive phosphorus and dissolved nitrogen;
vi. ammonia; and
vii. toxic contaminants

and the effect of these contaminants on the existing water quality; and

f. a description of the effects of the discharge on the immediate and downstream receiving environments, including on any downstream waterbody; and

g. the types of non-biological or persistent contaminants in the discharge, and whether any contaminant is likely to accumulate in the river, environment, or in an estuary or lake; and

h. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

i. matters of concern to tangata whenua;
ii. aquatic ecosystems;
iii. human health and amenity values; and
iv. any value associated with the river specified in the Regional Policy Statement for Manawatu-Wanganui; and

i. a description of contingency measures available, such as storage ponds or land disposal options to avoid the need to discharge during periods of low flows; and

j. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.2.11 DSW Rule 9. Discharge of contaminants resulting from maintenance

Pursuant to Section 88 of the Act, applications for Controlled Activities described in DSW Rule 9 of this Plan shall include the following information –

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including map reference from NZMS map, scale 1:50 000, and plans of the site showing the location of the point of discharge, drains, watercourses and neighbouring properties; and

c. a description of the receiving environment including:

    i. existing water quality;
    ii. aquatic ecosystems;
    iii. the sensitivity of the receiving environment to adverse effects; and
    iv. whether the receiving water is within a lake catchment, or drains into any river with high water quality; and

d. an assessment of whether any of the following effects are likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of contaminant:

    i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
    ii. any conspicuous change in the colour or visual clarity;
    iii. the rendering of fresh water unsuitable for consumption by farm animals; or
    iv. any significant adverse effects on aquatic life; and

e. measures that will be taken to avoid, remedy or mitigate any adverse effects on:

    i. aquatic ecosystems;
    ii. human health and amenity values; and

f. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

## 34.3 Information required with water permit applications

### 34.3.1 SW Rules 2, 3, 3A and 3B. Takes from the Hautapu, Mangatainoka or Makuri Rivers and their tributaries; and Whakapapa and Whanganui minimum flows

Pursuant to Section 88 of the Act, applications for Non-Complying Activities described in SW Rules 2 and 3; and Discretionary Activities in SW Rules 3A and 3B of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the point of abstraction, and neighbouring properties; and

c. a description of the environment including:

i. the natural flow regime;
ii. aquatic ecosystems; and
iii. other in-stream values, such as recreation and amenity

and the effects of the abstraction on that environment; and

d. the daily volumes of water sought, the rate of abstraction (in litres per second), and methods used to measure and record the abstraction rate; and

e. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

i. matters of concern to tangata whenua;
ii. aquatic ecosystems;
iii. recreation and amenity values;
iv. scenic characteristics; and
v. any value associated with the river specified in the Regional Policy Statement for Manawatu-Wanganui; and

f. a description of

i. any alternative sources of water;

ii. the proposed water use;
iii. the efficiency of the system for the proposed use; and
iv. water conservation measures to be undertaken; and

g. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.3.2 SW Rule 5. All other surface water takes

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in SW Rule 5 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the point of abstraction, and neighbouring properties; and

c. a description of the environment including:

i. the natural flow regime;
ii. aquatic ecosystems; and
iii. other in-stream values, such as recreation and amenity

and the effects of the abstraction on that environment; and

d. the daily volumes of water sought, the rate of abstraction (in litres per second), and methods used to measure and record the abstraction rate; and

e. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

i. matters of concern to tangata whenua;
ii. aquatic ecosystems;
iii. recreation and amenity values; and

f. a description of

i. any alternative sources of water;
ii. the proposed water use;
iii. the efficiency of the system for the proposed use;
iv. water conservation measures to be undertaken; and

g. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.3.3 SW Rule 8. Diverting water from wetlands

Pursuant to Section 88 of the Act, applications for Non-Complying Activities described in SW Rule 8 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the diversion, and neighbouring properties; and

c. a description of the wetland including:

   i. the degree of modification from its natural state;
   ii. the biological diversity or uniqueness of aquatic or terrestrial species or habitats;
   iii. its significance as an area of indigenous vegetation;
   iv. its hydrological or biological relationship with a river or lake in terms of river flows, lake levels or water quality;
   v. its significance in terms of scientific, educational, recreational, aesthetic or intrinsic values; and
   vi. its cultural or spiritual significance to Maori; and

d. how the applicant intends to remedy, mitigate or offset any adverse effects on the wetland; and

e. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.3.4 SW Rule 10. All other damming or diversion of surface water

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in SW Rule 10 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the dam or diversion, and neighbouring properties; and

c. a description of the environment including an assessment of existing surface water and groundwater levels upstream and downstream; and

d. the effects of the dam or diversion on:

   i. water levels in any other water body, including any wetland, lake, river, or aquifer; and
   ii. the risk of flooding upstream or downstream; and

e. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.3.5 SW Rule 11. Established damming or diversion in an artificial watercourse

Pursuant to Section 88 of the Act, applications for Controlled Activities described in SW Rule 11 of this Plan shall include the following information –

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including map reference from NZMS map, scale 1:50 000, and plans of the site showing the location of the damming or diversion and neighbouring properties; and

c. the effects of the dam or diversion on:

   i. water levels in any other waterbody, including any wetland, lake, river or aquifer; and
   ii. the risk of flooding upstream or downstream; and

d. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.3.6 GW Rule 3. All other groundwater takes

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in GW Rule 3 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the point of abstraction, and neighbouring properties; and

c. the daily volumes of water sought, the rate of abstraction (in litres per second), and methods used to measure and record the abstraction rate; and

d. in relation to the bore:

i. the depth of the bore;
ii. a copy of the bore log from the well driller where available;
iii. the results of a pump test;
iv. methods that will be used to control flow from the bore;
v. methods that will be used to avoid groundwater contamination via the bore;
vi. additional bore information if requested by the Council; and
vii. the distance between the bore and nearby surface waters; and

f. a description of:

i. the proposed water use;
ii. the efficiency of the system for the proposed use; and
iii. water conservation measures to be undertaken; and

g. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

### 34.3.7 GW Rules 4, 6 and 7. Damming groundwater, all other diversions of groundwater, and using heat or energy from groundwater

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in GW Rules 4, 6 or 7 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the exact location of the activity, and neighbouring properties; and

c. a description of the aquifer affected, and an assessment of the effects of the activity on the environment; and

d. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

## 34.4 Information required for land use permit applications

### 34.4.1 LM Rules 1 and 3. Coastal foredunes, and other vegetation clearance and soil disturbance

Pursuant to Section 88 of the Act, applications for Discretionary Activities described in LM Rule 1 and Restricted Discretionary Activities described in LM Rule 3 of this Plan shall include the following information—

a. a statement specifying all other resource consents that the applicant may require from the Regional Council or the District Council in respect of the activity, and whether or not the applicant has applied for such consents; and

b. a description of the site of the proposed activity, including the map reference from NZMS map, scale 1:50,000, and plans of the site showing the location of the activity, including major features, rivers and streams, existing tracking, proposed tracking, waterbody crossings, any other earthworks, roads, any significant habitat site or significant landscape, and neighbouring properties; and

c. for **vegetation clearance**: the method of clearance, the location of any skid sites, whether burning off is intended, what replanting is planned; and

d. for **soil disturbance**: the method of disturbance, what future management (including rehabilitation of the site) is planned; and

e. the measures that will be taken to avoid, remedy or mitigate any adverse effects on:

   i. matters of concern to tangata whenua;
   ii. aquatic ecosystems;
   iii. recreation and amenity values;
   iv. any conspicuous change in the colour or visual clarity; and

v. the soil resource, in particular effects on soil quality resulting from the loss of soil; and

f. a description of the consultation undertaken with parties interested in or affected by the proposal, and the applicant's response to the views of those consulted.

## 34.5 Resource Consent Application Notification

Applications for resource consents under this Plan will be assessed and notified in accordance with Section 94 of the Resource Management Act 1991.

# CHAPTER EIGHT
# ADMINISTRATIVE PROCESSES, REVIEW AND MONITORING

## 35. Processes to address cross boundary issues

Section 67 of the Act requires the Plan to contain the processes to be used to deal with issues that cross local authority boundaries and issues between the Council and the district councils and neighbouring regional councils.

There are three main issues that cross regional and district council boundaries for which processes need to be specified in this Plan. They relate to on-site wastewater disposal, approaches to deal with riparian management issues, and vegetation clearance.

The potential for jurisdictional overlap between the Regional Council and district councils in matters relating to on-site sewage disposal is an important cross boundary issue. The process to address this issue is to hold annual meetings with all district council staff responsible for approving on-site systems in their districts. The Regional Council will also assist districts in preparing brochures explaining the importance of on-site wastewater system installation and maintenance.

Another issue that crosses regional and district council boundaries is the potential overlap of approaches in dealing with riparian management. The process to address this issue is to consult with district councils during the implementation of the Land and Riparian Management Strategy. The result of this consultation will be the development of guidelines on riparian management relevant to this Region.

The other main cross boundary issue is the different approaches to vegetation clearance between regional and district councils. The process to address this issue is to liaise and share information with district councils relating to the effects of vegetation clearance. The Regional Council will assist, where possible, in providing advice and expertise in land management matters where the district council has specified restrictions in vegetation clearance.

There is no issue in this Region that crosses neighbouring regional council boundaries. All matters addressed in this Plan relate to issues wholly within the boundary of the Manawatu-Wanganui Regional Council.

## 36. Review

Section 79 of the Act requires that a full review of the Plan must be carried out not more than ten years after the Plan becoming operative.

The Council will review specific parts of the Plan prior to the full review if:

- information in the Environmental Management Report or State of the Environment Report indicates that provisions in the Plan are inadequate or inappropriate; or
- new issues arise that need to be addressed; or
- changes to the Regional Policy Statement for Manawatu-Wanganui make this Plan inconsistent with the RPS.

In particular, the Council will assess the effectiveness of DL Rule 7 within 5 years of this Plan becoming operative, (refer to DL Method 6). To do this Council will:

- investigate the sources of nitrate contamination in groundwater, in particular in the Horowhenua district;
- assess the potential contribution fertiliser use has in elevated nitrate levels; and
- assess the effectiveness of providing information in reducing nitrate contamination in groundwater in the Region.

## 37. Monitoring

Section 35 of the Act imposes a duty on the Council to monitor the suitability and effectiveness of every regional plan. Section 67 of the Act requires every regional plan to contain the procedures that will be used to review the plan, and the procedures that will be used to monitor the effectiveness of the plan in achieving its objectives and policies.

Monitoring the effectiveness of this Plan, as a means of achieving its objectives and policies, will be based on the information provided by the Regional Monitoring Strategy for Manawatu-Wanganui.

The Regional Monitoring Strategy for Manawatu-Wanganui defines a comprehensive framework of monitoring programmes that, when implemented, will provide information on environmental quality and resource use performance in the Region for the:

- **Environmental Management Report** (EMR) prepared annually on environmental management pressures and Regional Council responses; and

- **State of the Environment Report** (SER) prepared three yearly to report on the state of the Region's environmental quality.

The detailed procedures and methods from the monitoring modules and programmes of the Regional Monitoring Strategy that are of particular relevance to this Plan are:

- Land;
- Water Quality;

- Water Quantity;
- Fluvial Systems;
- Groundwater; and
- Ecosystems.

In addition to the procedures and methods contained in the Regional Monitoring Strategy, several other methods may be utilised as appropriate to monitor the effectiveness of the Plan. These include, where appropriate:

- use of information, monitoring and research programmes carried out by other agencies;

- use of information (including observations, requests and complaints) from iwi, territorial local authorities, central government, other agencies and the public; and

- surveys of public perception of the Region's environment and resource management undertaken.

In addition to the provisions of the Regional Monitoring Strategy 3 specific methods to monitor the effectiveness of the Plan are described below.

## 37.1 Surface water takes and uses

**SW Method 1. Improve information on which to base environmental goals.**

The Regional Council will assess the existing life-supporting capacity of selected rivers in the Upper Manawatu catchment at low flows, determine the percentage of low flows already allocated, and set environmental goals for those rivers.

**SW Method 2. Identify all groundwater recharge areas.**

The Regional Council will identify the major groundwater recharge areas in the Region and determine the potential for adverse effects from major surface water abstractions. (Cross-reference to Chapter Five, Groundwater).

**SW Method 3. Assessment of Permitted Activities.**

The Regional Council will determine the probable number of abstractions allowed as Permitted Activities in the Region and assess their effects on low flows.

# APPENDICES

**Appendix 1 - National Water Conservation Orders for the Manganui o te Ao River and the Rangitikei River**

**THE NATIONAL WATER CONSERVATION (MANGANUI O TE AO RIVER) ORDER 1988**

**1. Title and Commencement**

(1) This order may be cited as the National Water Conservation (Manganui o te Ao River) Order 1988.

(2) This order shall come into force on the 14th day after the date of its notification in the Gazette.

**2. Interpretation**

In this order, unless the context otherwise requires:

"Act" means the Water and Soil Conservation Act 1967;

"normal flow" at any point in a river or stream means:

- the actual flow rate at that point, plus
- any abstractions or diversions from the river or stream and its tributaries upstream of that point, less
- any discharges into the river or stream or its tributaries upstream of that point, except that no account shall be taken of discharges into the Orautoha Stream at or about map reference NZMS 260 S20:057014 in accordance with the notified use authorising the Raetihi Power Scheme;

"minimum flow" at any point in a river or stream means the mean of the annual minima of the 7 day flow, as estimated by the Rangitikei-Wanganui Catchment Board, where "7 day flow" means the mean flow over any 7 day period.

**3. Outstanding Characteristics and Features**

It is hereby declared that the Manganui o te Ao River and its tributaries, the Mangaturuturu and Makatote Rivers and the Waimarino and Orautoha Streams, include and provide for:

a. outstanding wild and scenic characteristics;

b. an outstanding wildlife habitat for the blue duck or whio (Hymenolaimus malacorhynchos);

c. and outstanding recreational fishery.

**4. Retention of Natural Waters in a Natural State**

Because of the outstanding characteristics and features specified in clause 3 of this order, the quantity and rate of flow of natural water in the waters described in the First Schedule to this order shall be retained in their natural state.

**5. Partial Retention of Natural Waters**

Because of the outstanding characteristics and features specified in clause 3 of this order the rate of flow of the natural waters in the waters described in the Second Schedule to this order shall not:

a. differ from the normal flow by more than 5 percent;

b. fall below the minimum flow.

**6. Right to Dam not to be Granted**

A right to dam any of the bodies of water specified in the First and Second Schedules to this order shall not be granted under Sections 21 or 23 of the Act.

**7. Water Rights and General Authorisations for Discharges**

(1) No water rights under Sections 21 or 23 of the Act shall be granted by the National Water and Soil Conservation Authority or by the Regional Water Board (as appropriate) and no general authorisations under Section 22 of the Act shall be made by the Regional Water Board for any discharge into any part of the catchment of the Manganui o te Ao River if the effect of the discharge would be either to cause the waters described in the First and Second Schedules of this order to breach the provisions and standards set out below or (should those waters fail to meet these provisions and standards), to cause the water condition in those waters to deviate further from compliance with these provisions and standards.

After allowing for reasonable mixing of the discharge with the receiving water:

i. the water temperature shall be less than 25 degrees Celsius in the months of October to April inclusive, and shall be less than 13 degrees Celsius in the months of May to September inclusive, and within that range the natural water temperature shall not be changed by more than 3 degrees Celsius;

ii. the acidity or alkalinity of the water as measured by the pH shall be within the range 6.0 to 9.0, and within that range the

natural pH of the water shall not be changed by more than 1.0 unit;

iii. the water shall not be tainted so as to be unpalatable or unsuitable for consumption by humans or farm animals;

iv. the water shall not emit an objectionable odour;

v. there shall be no adverse effect on the aquatic community attributable to pollutants;

vi. aquatic organisms shall not be rendered unsuitable for human consumption by accumulation of excessive concentrations of pollutants;

vii. the natural colour and clarity of the waters shall not be changed to a conspicuous extent;

viii. there shall be no visible oil or grease films or conspicuous floating or suspended waste materials;

ix. the concentration of dissolved oxygen shall exceed 80 percent of saturation concentration;

x. there shall be no undesirable biological growths attributable to pollutants.

(2) No water rights under Sections 21 or 23 of the Act shall be granted by the National Water and Soil Conservation Authority or by the Regional Water Board (as appropriate), and no general authorisations under Section 22 of the Act shall be made by the Regional Water Board in respect of any part of the catchment of the Manganui o te Ao River where the effect of such rights or authorisations would be that the provision of this order cannot remain without change or variation **provided that** water rights may be made in respect of any part of those waters for any of the following purposes:

i. research into, and enhancement of, fisheries and wildlife habitats;

ii. the maintenance or protection of roads, bridges and other necessary public utilities;

iii. soil conservation works undertaken pursuant to the Soil Conservation and Rivers Control Act 1941.

**8. Scope of this Order**

Nothing in this order shall be construed as limiting the effect of the second proviso to Section 21(1) of the Act relating to the use of water for domestic

needs, for the needs of animals and for or in connection with firefighting purposes.

**FIRST SCHEDULE**

a. The Manganui o te Ao River upstream of its confluence with the Waimarino Stream.

b. The Makatote River and the Mangaturuturu River.

**SECOND SCHEDULE**

a. The Manganui o te Ao River downstream of its confluence with the Waimarino Stream.

b. The Waimarino and Orautoha Streams.

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**THE WATER CONSERVATION (RANGITIKEI RIVER) ORDER 1993**

**1. Title and Commencement**

(1) This order may be cited as the Water Conservation (Rangitikei River) Order 1993.

(2) This order shall come into force on the 28th day after the date of its notification in the Gazette.

**2. Interpretation**

In this order, unless the context otherwise requires:

"Act" means the Resource Management Act 1991:

"Middle River" means-

a. The Rangitikei River itself from its confluence with the Makahikatoa Stream (approximate map reference Infomap 260 U21:725-888) to the Mangarere Bridge (approximate map reference Infomap 260 T22:483-496); and

b. The Whakaurekau River plus all its tributaries and the Kawhatau River plus its following tributaries, namely, the Pouranaki River and the Mangakokeke Stream:

"River flow" means for any given point on the Middle River and Upper River-

a. The mean daily flow occurring at that point; plus

b. The sum of abstractions from the Upper and Middle River upstream of that given point expressed as a daily mean, but not including any abstraction from the Moawhango River at the Moawhango Dam (approximate map reference Infomap 260 T20:471-962) for hydro-electric power generation purposes:

"Upper River" means-

a. The Rangitikei River itself from its source (approximate map reference Infomap 260 U19:723-313) to its confluence with the Makahikatoa Stream (approximate map reference Infomap 260 U21:725-888); and

b. All rivers and streams contributing water to the Rangitikei River upstream of that confluence.

**3. Outstanding Characteristics and Features**

(1) It is hereby declared that the Upper River includes and provides for-

a. Outstanding wild and scenic characteristics; and
b. Outstanding recreational, fisheries, and wildlife habitat features.

(2) It is hereby declared that the Middle River includes and provides for-

a. Outstanding scenic characteristics; and
b. Outstanding recreational and fisheries features.

**4. Waters to be Protected**

Because of the outstanding characteristics and features specified in clause 3 of this order, the waters of the Upper River and Middle River are, subject to clause 5 of this order, to be protected as follows:

a. The quantity and rate of flow of natural water in the Upper River shall be retained in its natural state;

b. The rate of flow of the natural waters at any point in the Middle River shall not be less than 95% of the river flow at that point;

c. Resource consents under the Act shall not be granted to dam the Upper River or the Middle River;

d. Resource consents under the Act shall not be granted to construct any dam downstream of the Middle River, which has the effect of impounding water in the Middle River upstream of the confluence with the Hautapu River.

e. In granting any resource consents under the Act or making a rule in a regional plan, in respect of the Upper River or the Middle River, the regional council shall ensure that, after allowing for reasonable mixing of the discharge with the receiving water-

i. The natural water temperature shall not be changed by more than 3 degrees Celsius; and
ii. The acidity or alkalinity of the water as measured by the pH shall be within the range of 6.0 to 9.0; and within that range the natural pH of the water shall not be changed by more than 1.0 unit; and
iii. The concentration of dissolved oxygen shall be not less than 80 percent of saturation concentration; and
iv. There shall be no undesirable biological growths attributable to contaminants.

**5. Scope of Order**

(1) Nothing in this order shall be construed as limiting any right to the use of water for domestic needs, for the needs of animals, and for or in connection with fire-fighting purposes.

(2) Nothing in this order shall prevent the renewal of any general authorisation granted under Section 22 of the Water and Soil Conservation Act 1967 and deemed to be a provision of a regional plan under Section 368 of the Act, or any resource consent under the Act which is current on the commencement of this order, or the granting of resource consents under the Act in substitution for existing use rights which are current on the commencement of this order.

(3) Nothing in this order shall prevent the granting of resource consents under the Act, or the making of rules in regional plans, in respect of the Upper River or the Middle River, for the purposes of-

a. Research into, and enhancement of, fisheries and wildlife habitats; or
b. Maintenance and protection of roads, bridges, and other necessary public utilities; or
c. Soil conservation, rivers control, or other activities undertaken pursuant to the Soil Conservation and Rivers Control Act 1941.

(4) Nothing in this order shall prevent the granting of resource consents under the Act for the construction of any dam downstream from the Middle River which has the effect of impounding water in the Middle River as far upstream as the confluence with the Hautapu River.

**Explanatory Note**
*This note is not part of the order, but is intended to indicate its general effect.*

This order, which comes into force 28 days after its notification in the Gazette, declares-

a. The waters of the Upper Rangitikei River-

   i. To have outstanding wild and scenic characteristics; and
   ii. To have outstanding recreational, fisheries, and wildlife habitat features; and

b. The waters of the Middle Rangitikei River-

   i. To have outstanding scenic characteristics; and
   ii. To have outstanding recreational and fisheries features.

   The order specifies how the waters are to be protected and the limitations of the protection.

## Appendix 2 - Provisions in the Transitional Regional Plan replaced by regional rules in this Plan

This Plan, when it becomes operative, will delete the provisions of the Transitional Regional Plan relating to the matters referred below. Other regional plans have deleted any remaining provisions of the Transitional Regional Plan.

### General Authorisations

The General Authorisations specified below have been replaced by provisions in this Plan. The content of these General Authorisations are in the Transitional Regional Plan. They have been reproduced in the Background Report to this Plan.

- General Authorisation of Small Dams in so far as applies to natural water courses (except small dams in rivers or lakes, which are covered by provisions in the Regional Plan for Beds of Rivers and Lakes and Associated Activities).

- General Authorisation of Minor Diversions in so far as applies to natural water courses (except minor diversions in rivers or lakes, which are covered by provisions in the Regional Plan for Beds of Rivers and Lakes and Associated Activities).

- Authorisation of Small Takes (except small surface water takes in the Oroua catchment, which are covered by provisions in the Oroua Catchment Water Allocation and River Flows Regional Plan).

- Authorisation of Stormwater and Land Drainage Discharges (except stormwater discharges in the Manawatu catchment which are covered by provisions in the Manawatu Catchment Water Quality Regional Plan).

- Authorisation of Septic Tank Discharges (except septic tank discharges in the Manawatu catchment which are covered by provisions in the Manawatu Catchment Water Quality Regional Plan).

### Local Water Conservation Notices

The clauses of the Local Water Conservation Notices specified below have been replaced by provisions in this Plan. The content of these Notices are in the Transitional Regional Plan. They have been reproduced in the Background Report to this Plan.

- Clause 4.2 of the Local Water Conservation (Hautapu River) Notice 1990. This clause related to the granting of water permits and has been replaced by SW Policy 3 and SW Rule 2.

- Clause 4 of the Local Water Conservation (Makuri River) Notice 1990. This clause related to minimum flows in the Makuri River and has been replaced by SW Policy 3 and SW Rule 2.

- Clause 5.1 of the Local Water Conservation (Mangatainoka River) Notice 1991. This clause related to the granting of water permits that could adversely affect recreational fishery value of the river. It has been replaced by SW Policy 3 and SW Rule 2.

**Whakapapa and Whanganui Rivers minimum flows**

The determination of the Planning Tribunal (now the Environment Court) fixing a minimum acceptable flow in the Whakapapa River at the footbridge and the Whanganui River at Te Maire. This has been replaced by SW Policy 4 and SW Rule 3. The content of this determination is in the Transitional Regional Plan.

**Manawatu-Wanganui Regional Council Bylaw 1991**

The clauses of the Manawatu-Wanganui Regional Council Bylaw 1991 specified below have been replaced by provisions in this Plan. The content of this Bylaw is in the Transitional Regional Plan. The Bylaw has been reproduced in the Background Report to this Plan.

- Clause 4 relating to the conservation of groundcover and land stability. This clause has been replaced by LM Rules 2 and 3.

- Clause 8 relating to the alteration of watercourses (except alterations in rivers or lakes, which are covered by provisions in the Regional Plan for Beds of Rivers and Lakes and Associated Activities). This clause has been replaced by SW Rules 8 and 9.

- Clause 9 relating to private drains. This clause has been replaced by DSW Rules 3 and 4.

- Clause 14 relating to artesian flow. This clause has been replaced by GW Rule 1.

**Final Water Classifications**

The provisions of the Final Water Classifications for Manawatu and Wanganui specified below have been replaced by provisions in this Plan. The content of the Final Water Classifications is in the Transitional Regional Plan. The Final Water Classifications have been reproduced in the Background Report to this Plan.

- Final Water Classification – Manawatu (except those parts which are covered by provisions in the Manawatu Catchment Water Quality Regional Plan and the Regional Coastal Plan).

- Final Water Classification – Wanganui (except those parts which are covered by provisions in the Regional Coastal Plan).

## Appendix 3 - Domestic Wastewater Flow Information

The following tables are taken from the New Zealand Manual of Alternative Wastewater Treatment and Disposal Systems, Volume II, Part A, *On-site Wastewater Disposal from Households and Institutions*. ARC Environment Technical Publication No. 58, second edition November 1994. For design recommendations the original text should be used.

### Table A1 Wastewater Flow Design Allowances

| Source | Wastewater Flow Allowance in litres/person/day | |
|---|---|---|
| | On-site Roofwater Tank Supply | Community or Borehole Water Supply |
| Households | 140 | 180 |
| Households with full water reduction fixtures | 115 | 145 |
| Households with 'up-market' facilities | 170 | 220 |
| Motels/Hotels | | |
| - guests, resident staff | 140 | 180 |
| - non-resident staff | 30 | 40 |
| - reception rooms | 20 | 30 |
| - bar trade | 20 | 25 |
| - restaurant (per diner) | 20 | 30 |
| Community Halls | | |
| - banqueting | 20 | 30 |
| - meetings | 10 | 15 |
| Restaurants (per diner) | | |
| - dinner | 20 | 30 |
| - lunch | 15 | 25 |
| Tea Rooms (per customer) | | |
| - without restroom facilities | 10 | 15 |
| - with restroom facilities | 15 | 25 |
| Schools (pupils plus staff) | 30 | 40 |
| Rural factories, shopping centres | 30 | 50 |
| Camping Grounds | | |
| - fully serviced | 100 | 130 |
| - recreation areas | 50 | 65 |

**Table A2 Basic Septic Tank Capacities**

| | | |
|---|---|---|
| A. | Households (Individual Dwellings) | |
| | No. of Persons Served per Dwelling | Minimum Tank Capacity (Litres) * |
| | 1 to 5 | 2,700 |
| | 6 to 9 | 3,300 |
| | | * capacity independent of source of water supply |
| B. | Households (Blocks of Units/Flats) | |
| | For 10 persons or more the capacity (C) may be determined by the formula | |
| | C = (PA + 2,000) litres | |
| | where P = the number of persons to be served | |
| | and A = the daily wastewater flow allowance in litres/person/day as per table A1 (and taking account of source of water supply) | |
| C. | Institutions | |
| | For flows greater than 700 litres per day the capacity (C) may be determined by the formulae as set out below | |
| | Motels/Hotels - without restaurant | C = (PA plus 2,000) litres |
| | with restaurant | C = (PA plus 3,000) litres |
| | Community halls, schools, rural factories, shopping centres, camping grounds | C = (PA plus 2,000) litres |
| | where P = the number of persons to be served | |
| | And A = the daily wastewater flow allowance in litres/person/day as per Table A1 (and taking account of source of water supply) | |

**Table A3 Household Occupancy Allowances**

| Number of Bedrooms | Occupancy for Design Purposes |
|---|---|
| 1 | 2 |
| 2 | 4 |
| 3 | 5 |
| 4 | 6 |
| 5 | 8 |
| 6 | 9 |

## Appendix 4 - Nitrogen Loading Rate Calculations

The calculation table below is taken with acknowledgement to Environment Waikato.

| | | |
|---|---|---|
| Total N/cow/year | = | 20 g/cow/day x 270 days |
| | = | 5.4 kg |
| Nitrogen loading rate | = | 150 kg N/ha/year |
| Land area required/cow | = | 5.4/150 |
| | = | 0.036 ha/year |
| | = | 360 $m^2$ |
| Nitrogen loading rate | = | 150 kg N/ha/year |
| Land area required /100 cows | = | 5.4 x 100/150 |
| | = | 3.6 ha |

### Sources of Data and Assumptions

1. Total N/cow/day = 20.0 g (Dairy Farm Effluent Management (1995) Environment Waikato).
2. Nitrogen loading rate = 150 kg N/ha/year.
3. Typical lactation period = 270 days.

### Application area for a N loading rate of 150kg/ha/yr

| Cow | Area Required (ha) |
|---|---|
| 100 | 3.6 |
| 150 | 5.4 |
| 200 | 7.2 |
| 250 | 9 |
| 300 | 10.8 |
| 350 | 12.6 |
| 400 | 14.4 |
| 450 | 16.2 |
| 500 | 18 |

## Appendix 5 - Extracts from the Pesticides (Vertebrate Pest Control) Regulations 1983

**13. Restrictions on application of controlled pesticides from aircraft -** No person shall—

(a) Engage any other person to apply a controlled pesticide from any aircraft; or
(b) Apply a controlled pesticide from any aircraft—

to any land (other than a road, place, area, or district specified in regulation 12(1) of these regulations), except with the prior permission in writing of the Medical Officer of Health in whose district it is proposed to apply the controlled pesticide, and in accordance with every condition (if any) imposed by the Medical Officer of Health in giving the permission.

**14. Applications for permission:** (1) Where it is desired to obtain permission required under regulation 12 or regulation 13 of these regulations to apply or otherwise use a controlled pesticide, the person or body on whose behalf the controlled pesticide is to be applied or otherwise used shall apply in writing to the appropriate authority or Medical Officer of Health concerned.

(2) The application for permission shall specify —

(a) The approximate date when it is intended to apply or otherwise use the controlled pesticide; and
(b) The nature, concentration, and purpose of the controlled pesticide; and
(c) A sufficient description, by reference to its boundaries, of the place where the controlled pesticide is to be applied to enable the appropriate authority or Medical Officer of Health concerned to identify it (including, in the case of any proposed application by an aircraft, districts, road, and other commonly known features); and
(d) Any other information that the appropriate authority or Medical Officer of Health concerned may reasonably require in order to decide whether permission should be given in accordance with these regulations.

**15. Permission of Medical Officer of Health:** (1) On considering an application for permission made to him under regulation 14 of these regulations, a Medical Officer of Health, where he is satisfied that the application or other use of the controlled pesticide to which it relates will not contravene —

(a) The Health Act 1956; or
(b) The Poisons Act 1960 or Toxic Substances Act 1979; or
(c) These regulations, —

shall grant permission for the proposed application or other use of the controlled pesticide, but otherwise he shall refuse the application for permission.

(2) In granting permission under this regulation, a Medical Officer of Health may imposed such conditions (if any) to the permission as he thinks fit for the purposes of these regulations.

**18. Notification of intended use of controlled pesticides:** (1) No person shall engage any other person to apply a controlled pesticide specified in Part I of the First Schedule to the Act from an aircraft to any land unless public notice of the proposed application of the controlled pesticide to the land has been given in accordance with subclause (2) of this regulation.

(2) For the purpose of this regulation, a public notice shall be published at least 2 weeks before the intended date when the controlled pesticide is to be applied to the land, in a newspaper circulating in the area in which the land is situated, specifying the following information:

(a) The date on which, or as soon as practicable after which, it is intended to apply the controlled pesticide:
(b) The name and nature of the controlled pesticide:
(c) A clear description, by reference to its boundaries (including districts, roads, and other commonly known features), of the land to which the controlled pesticide is to be applied:
(d) The name and address of the person or body responsible for the application of the controlled pesticide.

(3) A notice under subclause (2) of this regulation shall become invalid for the purpose of this regulation if the controlled pesticide has not been applied to the land within 2 months after the date on which the notice is published in the newspaper.

(4) No person shall —

(a) Engage any other person to apply a controlled pesticide specified in Part I of the First Schedule to the Act from an aircraft to any land; or
(b) Apply any such controlled pesticide from an aircraft to any land —

unless notice of the proposed application of the controlled pesticide to the land has been given to the officer in charge of the police station in the area in which the controlled pesticide is to be applied.

(5) Subclause (4) of this regulation shall not apply where a controlled pesticide is to be applied to any land by an occupier of that land.

(6) No approved operator shall apply or otherwise use, or permit any person under his supervision and control to apply or otherwise use, a controlled pesticide specified in Part II of the First Schedule to the Act on any land unless notice of the proposed application or other use has been given to the Pest Destruction Board for the pest destruction district in which the land is situated.

(7) Subclause (6) of this regulation shall not apply where —

(a) The approved operator is the occupier of the land, or is an approved operator specified in regulation (4)(1)(b) of these regulations; or
(b) The land is State forest land, or is land leased or managed by the Minister of Forests.

**Controlled Pesticides given in Part I of the First Schedule are —**

Sodium Fluoroacetate (1080); Methyl Napthyl Fluoroacetamide; Arsenic; Phosphorus; Strychnine; Cyanide; 3-Chloro-P-Toluidine Hydrochloride (DRC 1339); Alpha-chloralose (in concentrations greater than 2.5%); 4-Aminopyridine (also known as Avitrol).

## Appendix 6: Water bodies with important habitats and species; important native bird habitats; and lakes of outstanding to moderately high SSBI ranking in this Region

### Water Bodies with Important habitats and species

| Catchment & Water Body | Reference | Importance |
|---|---|---|
| **Akitio River Catchment** | | |
| • Akitio River | 100 metres upstream of the CMA boundary located at the seaward edge of the bridge that crosses the river at NZMS 260 U25: 997 619. | Whitebait fishery / Inanga Spawning |
| • Whakawahine Stream | Up to 2km from the confluence with the Akitio River. | Whitebait fishery / Inanga Spawning |
| **Hokio Stream** | | |
| • Hokio Stream | From the stream mouth to Lake Horowhenua. 100 metres upstream of the CMA boundary located at the seaward edge of the bridge that crosses the stream at NZMS 260 S25:949-658. | Whitebait fishery / Inanga spawning |
| **Kai Iwi Stream Catchment** | | |
| • Kai Iwi Stream | From stream mouth to intersection with SH3 (R22 748 493) 100 metres upstream of the CMA boundary located at the seaward edge of the Archers Bridge footbridge that crosses the stream at NZMS 260 R22:721-452. | Whitebait fishery / Inanga spawning |
| **Kaikokopu Stream** | | |
| • Kaikokopu Stream | From stream mouth to Lake Kaikokopu (S24 019 899) | Whitebait fishery / Inanga spawning |
| **Koitiata Stream** | | |
| • Koitiata Stream | Up to 5km from stream mouth (S23 002 186) | Whitebait fishery / Inanga spawning |
| **Kaitoke Stream** | | |
| • Kaitoke Stream | From stream mouth to Kaitoke Lake (R22 869 358) | Whitebait fishery / Inanga spawning |
| **Manawatu River Catchment** | | |
| • Kahuterawa from confluence with Manawatu River | S24:294-872 to source | Trout |
| • Manawatu River | 100 metres upstream of the CMA boundary located at the seaward edge of the Foxton loop at NZMS S24:010-767 | Whitebait fishery / Inanga spawning |
| • Mangaatua | T24:538-913 to T24:581-962 | Trout |
| • Mangatangoi | U23:880-145 to U23:868-186 | Trout |
| • Mangatoro from confluence with Manawatu River | U23:809-027 to source | Trout |
| • Raparapawai | T24:642-933 to T24:649-984 | Trout |

| Catchment & Water Body | Reference | Importance |
|---|---|---|
| • Totara | T24:648-830 to T24:660-912 | Trout |
| • Turitea Stream main stem | T24:344-865 to T24:313-879 | Trout |
| • Turitea Stream main stem | T24:321-884 to T24:335-869 | Trout |
| • Whitebait Creek | From confluence with the Manawatu River to source | Whitebait fishery / Inanga spawning |
| **Mangahao River Catchment** | | |
| • Makaretu Creek | T24:485-845 to T24:474-850 | Trout |
| • Makaretu Creek | T24:458-858 to T24:443-849 | Trout |
| • Matarua Creek | T24:445-789 to T24:423-820 | Trout |
| • Otangane Stream | T24:377-717 to T24:363-725 | Trout |
| • Patupaiarehe Stream | T25:348-700 to T24 331-711 | Fish spawning |
| **Manganui o te Ao River Catchment** | | |
| • Makatote River above and below Makatote Viaduct | S20:158-126 to S20:170-128 | Trout |
| • Orautoha Stream Manganui o te Ao confluence to Papa Stream | S20:027-067 to S21:046-022 | Trout |
| • Orautoha Stream above Papa Road | S20:047-021 to S21:055-017 | Trout |
| • Orautoha Middle Road upstream to quarry | S20:086-030 to S21:099-031 | Trout |
| • Papa Stream above Orautoha confluence | S20:046-022 to S21:048-027 | Trout |
| **Mangatainoka River Catchment** | | |
| • Bruce Stream from confluence with Makakahi River | T25:347-525 to source | Trout<br>Fish spawning |
| • Makakahi River main stem | S25:287-514 to T25:310-517 | Trout<br>Fish spawning |
| • Makotukutuku Stream | S25:280-579 to source | Fish spawning |
| • Mangamaire from confluence with Mangatainoka River | T24:453-764 to source | Trout<br>Fish spawning |
| • Mangaraupiu from confluence with Mangatainoka River | T25:365-655 to source | Trout<br>Fish spawning |
| • Mangatainoka unnamed tributary at confluence with Mangatainoka River | T25:368-654 | Trout |
| **Mangawhero River** | | |
| • Mangateitei Stream above Mangawhero confluence | S20:158-902 to S20:190-951 | Trout |
| • Mangawhero River above Mangateitei confluence | S20:158-962 to S20:185-980 | Trout |
| • Mangawhero River Old Mangarewa Road | S20:133-963 to S20:145-970 | Trout |
| • Taonui Stream above SH49A | S20:140-987 to S20:135-001 | Trout |
| • Taonui Stream below SH49A | S20:138-977 to S20:140-987 | Trout |

| Catchment & Water Body | Reference | Importance |
|---|---|---|
| **Ohau River** | | |
| • Makahika River from confluence with Ohau River | S25:088-585 to source | Trout |
| • Ohau River | S25:994-571 to S25:952-578 | Trout |
| **Okehu Stream** | | |
| • Okehu Stream | From stream mouth to intersection with SH3 (R22 717 509) | Whitebait fishery / Inanga spawning |
| **Omapu Stream** | | |
| • Omapu Stream | Up to 1km from stream mouth (R22 749 441) | Whitebait fishery / Inanga spawning |
| **Ongarue River Catchment** | | |
| • Maramataha River from confluence with Ongarue River | S17 118808 to source | Trout |
| • Okauaka Stream from confluence with Ongarue River | S17 188866 to source | Trout |
| • Ongarue River | S17 133863 to source | Trout |
| • Waimiha Stream from confluence with Ongarue River | S17 133862 to source | Trout |
| • Waione Stream from confluence with Ongarue River | S18 119801 to source | Trout |
| **Oroua River Catchment** | | |
| • Oroua River | U22: 716-378 to T22: 699957 | |
| • Kiwitea Stream | T23:368-196 to T23:363-216 | Trout |
| • Makino Stream | S23:244-009 to S23:258-034 | Trout |
| • Mangiora Stream from confluence with Oroua River | T22:577-378 to source | Trout |
| **Pohangina River Catchment** | | |
| • Konewa Stream from confluence with Pohangina River | T23:576-204 to source | Trout |
| • Makiekie Stream | T22:650-317 to T22:615-313 | Trout |
| • Makohine Stream from confluence with Pohangina River | T23:469-058 to source | Trout |
| • Makohine Stream | T23: 475-058 to confluence | Fish spawning |
| • Porewa Stream from confluence with Pohangina River | T23:554-166 to source | Trout |
| • Porewa Stream | T23: 558-164 to confluence | Fish spawning |
| • Te Ekaou Stream from confluence with Pohangina River | T23:558-176 to source | Trout |
| • Te Ekaou Stream | T23: 576-176 to confluence | Fish spawning |
| • Waitokanui Stream from confluence with Pohangina River | T23:475-071 to source | Trout |

| Catchment & Water Body | Reference | Importance |
|---|---|---|
| **Rangitikei River Catchment** | | |
| • Ecology Stream at confluence with Rangitikei River | T20:692-177 to source | Trout |
| • Irirangi at confluence with Rangitikei River | T21:409-805 to source | Trout |
| • Kawhatau at confluence with Rangitikei River | T22:504-552 to source | Trout |
| • Makomiko at confluence with Rangitikei River | T20:651-121 to source | Trout |
| • Mangamaire at confluence with Rangitikei River | T20:692-092 to source | Trout |
| • Mangamako at confluence with Kawhatau River | T22:388-413 to source | Trout |
| • Mangakukeke at confluence with Kawhatau River | T22:636-507 to source | Trout |
| • Mangaohane at confluence with Rangitikei River | U21:707-818 to source | Trout |
| • Moawhango at confluence with Rangitikei River | T21:609-624 to source | Trout |
| • Otamatenanui at confluence with Rangitikei River | T20:672-108 to source | Trout |
| • Oturua at confluence with Rangitikei River | U20:716-015 to source | Trout |
| • Pourangaki at confluence with Kawhatau River | T22:635-508 to source | Trout |
| • Rangitikei River | 100 metres upstream of the CMA boundary located at the seaward edge of the boat ramp on the true left bank of the river located at NZMS S 24:009 | Whitebait fishery / Inanga spawning |
| • Rangitikei River main stem | U19:707-279 to U21:722-758 | Trout |
| • Trick at confluence with Rangitikei River | T20:674-151 | Trout |
| • Waingakai at confluence with Rangitikei River | U20:716-054 to source | Trout |
| • Whakarekou at confluence with Rangitikei River | U21:712-691 to source | Trout |
| **Raumai Range Stream** | | |
| • Raumai Range Stream | From stream mouth (S23 979 081) to source. | Whitebait fishery / Inanga spawning |
| **Retaruke River** | | |
| • Retaruke River above side road bridge of Upper Retaruke Road | S19:071-219 to S19:073-200 | Trout |
| • Retaruke River below Tupapakurua Stream confluence | S19:067-241 to S19:068-227 | Trout |
| • Retaruke River middle reaches upper Retaruke Road | S19:057-267 to S19:065-252 | Trout |

| Catchment & Water Body | Reference | Importance |
|---|---|---|
| • Retaruke River above and below Kouturoa East Road | S19:044-306 to S19:047-288 | Trout |
| • Tupapakurua Stream above Retaruke confluence | S19:068-227 to S19:073-225 | Trout |
| **Tiraumea River Catchment** | | |
| • Makuri River | T24:567-737 to T24:700747 | Fish spawning |
| • Makuriiti Stream | T24:700-782 to confluence with Makuri River | Fish spawning |
| **Turakina River** | | |
| • Turakina River | 100 metres upstream of the CMA boundary located at the continuation of the fenceline at NZMS 260 S23:918-246. | Whitebait fishery / Inanga spawning |
| **Waimahora Stream** | | |
| • Waimahora Stream | From stream mouth to intersection with Santoft Rd (S23 001 154) | |
| **Waitohu Stream** | | |
| • Waitohu Stream | From the stream mouth to the intersection with SH1 (S25 929 481) | Whitebait fishery / Inanga Spawning |
| **Whakapapa River Catchment** | | |
| • Kahahi Stream from confluence with Whakapapa River | S19 153498 to source [715] | Trout |
| • Whakapapa River from confluence with Whanganui River | S19 499188 to source | Trout |
| • Whakapapaiti Stream from confluence with Whakapapanui Stream | S19 243269 to source | Trout |
| • Whakapapanui Stream from confluence with Whakapapaiti Stream | S19 243269 to source | Trout |
| **Whanganui River Catchment** | | |
| • Pungapunga River from confluence with Whanganui River | S18 125544 to source | Trout |
| • Whanganui River | 100 metres upstream of the CMA boundary located at the seaward edge of the Cobham Street bridge at NZMS 260 R22:848-380 | Whitebait fishery / Inanga spawning |
| • Whanganui River | S18 055545 to source | Trout |

## Location of Important Native Bird Habitats within the Region

| Species | River & Location |
|---|---|
| Banded Dotterel and Black-fronted dotterel | Rangitikei River:<br>• Downstream of SH1 bridge for approximately 8 kms<br>• Tikorangi to Kakariki<br>• Upper Moawhango (above the Azim Gorge, including the Ngawakaakauae and Moawhango streams)<br>• Headwaters of the Rangitikei River<br>• Rangitikei River mouth |
| | Manawatu River:<br>• Ashhurst to Aoukautere<br>• Upstream of SH2 bridge at Ngawapuraua for approximately 2 kms<br>• Downstream of SH2 bridge at Ngawapurua for approximately 10 kms<br>• The confluence of the Mangatainoka and the Manawatu River<br>• Manawatu River mouth |
| | Whangaehu River:<br>• Rangipo Desert |
| | Turakina River:<br>• Turakina River mouth |
| Blue duck | Upper Whanganui Catchment, including:<br>• Whakapapa River above Piopiotea confluence<br>• Whanganui River above Whangapeke River confluence<br>• Manganui o te Ao River<br>• Upper Whanganui River<br>• Okupata Stream<br>• Mangatepopo Stream |

## Lakes in the Region of Outstanding to Moderately High SSBI Ranking

| Lake | Reference | Importance |
|---|---|---|
| Broadlands Wetland | T23 467 032 | Lowland lake, podocarp, broadleaved tree, reed, rush and sedge swamp<br>SSBI ranking – high |
| Christie's Lake | S22 955 464 | Lowland lake, restiad bog and tussockland, flax, reed, rush and sedge swamp<br>SSBI ranking – high |
| Edward's Lagoon | S24 230 967 | Lowland lake, reed swamp<br>SSBI ranking – moderate high |
| Fernwood Lake | S23 093 099 | Lowland lake<br>SSBI ranking – moderate high |
| Forest Road Wetlands | S23 025 030 | Lowland lake, shrub and flax swamp<br>SSBI ranking – high |

| Lake | Reference | Importance |
|---|---|---|
| Foxton lake No. 1 (Lake Omanu) | S24 010 816 | Lowland lake, reed, rush and sedge swamp<br>SSBI ranking – moderate high |
| Foxton Lake No. 2 | S24 010 823 | Lowland lake, reed, rush and sedge swamp<br>SSBI ranking – high |
| Heatherlea pond, bush and swamp | S25 040 670 | Lowland lake, broadleaved tree swamp, reed, rush and sedge swamp<br>SSBI ranking – moderate high |
| Ihuraua dam | T25 478 486 | Lowland lake, flax, rush and sedge swamp<br>SSBI ranking – moderate high |
| Kaimaikuku Tarn (Moawhango riverhead) | T20 525 989 | Ephemeral lowland pool<br>SSBI ranking – outstanding |
| Kaukatea Pond No. 1 | S22 984 424 | Lowland lake, reed swamp<br>SSBI ranking – moderate high |
| Koitaita Wildlife Management Reserve | S23 971 185 | Lowland lake, ephemeral lowland pool, rush and sedge swamp<br>SSBI ranking – moderate high |
| Lake Alice | S23 090 163 | Lowland lake, flax, reed, rush and sedge swamp<br>SSBI ranking – moderate high |
| Lake Bernard | S23 047 187 | Lowland lake, broadleaved-tree swamp<br>SSBI ranking – high |
| Lake Colenso | U21 791 658 | Montane lake, podocarp, flax, rush and sedge swamp<br>SSBI ranking – high |
| Lake Herbert | S23 063 162 | Lowland lake, broadleaved tree and flax swamp<br>SSBI ranking – moderate high |
| Lake Horowhenua | S25 005 635 | Lowland lake, podocarp, shrub, flax, rush and sedge swamp.<br>SSBI ranking – high |
| Lake Huritini | S25 922 535 | Lowland lake, shrub, flax and reed swamp<br>SSBI ranking – high |
| Lake Kaikokopu | S24 020 872 | Lowland lake, broadleaved tree, flax, reed swamp<br>SSBI ranking – high |
| Lake Kaitoke | R22 870 360 | Lowland lake, broadleaved tree swamp<br>SSBI ranking – moderate high |
| Lake Kopureherehere | S25 937 521 | Lowland lake, podocarp, flax and reed swamp<br>SSBI ranking – high |
| Lake Koputara | S24 020 871 | Lowland lake, shrub, reed, rush and sedge swamp<br>SSBI ranking – high |
| Lake Marahau | R22 658 495 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |
| Lake Namunamu | S22 207 434 | Lowland lake, podocarp, shrub, broadleaved tree and reed swamp<br>SSBI ranking – moderate high |
| Lake Ngaruru | S22 156 363 | Lowland lake, shrub, broadleaved tree, reed swamp |

| Lake | Reference | Importance |
|---|---|---|
| | | SSBI ranking – high |
| Lake Papaitonga | S25 985 601 | Lowland lake, podocarp, shrub, broadleaved tree, flax, reed, rush and sedge swamp.<br>SSBI ranking – outstanding |
| Lake Rotokuru (upper lake) | S20 269 942 | Montane lake<br>SSBI ranking – outstanding |
| Lake Tangimati | S24 004 702 | Lowland lake, reed, rush and sedge swamp<br>SSBI ranking – moderate high |
| Lake Vipan & Karamu | S23 025 211 | Lowland lake, shrub, flax and reed swamp<br>SSBI ranking – moderate high |
| Lake Waipu | S23 640 269 | Lowland lake<br>SSBI ranking – moderate high |
| Lake William | S23 070 175 | Lowland lake<br>SSBI ranking – moderate high |
| Makirikiri Tarns | U21 812 719 | Ephemeral montane pool, shrub bog and heathland, restiad bog and tussockland<br>SSBI ranking – outstanding |
| Marton Water Reservoirs | S22 141 315 | Lowland lake<br>SSBI ranking – moderate high |
| Morikau Lakes | S21 915 810 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |
| Morikau Ponds | S21 913 818 | Lowland lake<br>SSBI ranking – moderate high |
| Moutere Lake 4 | S25 974 668 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |
| Ngaruru Lakes A and B | S22 159 358 | Lowland lake, shrub, broadleaved tree, rush and sedge swamp<br>SSBI ranking – moderate high |
| Ohau river dune lakes | S25 926 568 | Lowland lake, flax and reed swamp<br>SSBI ranking – moderate high |
| Okotore lagoon | S25 946 634 | Lowland lake, flax and reed swamp<br>SSBI ranking – high |
| Omanuka Lagoon | S24 075 950 | Lowland lake, reed swamp<br>SSBI ranking – moderate high |
| Orouakaitawa lakes | S24 014 844, 01 | Lowland lake, reed and grass swamp<br>SSBI ranking – high |
| Oturoa Lake No. 1 | S24 997 738 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |
| Oturoa Lake No. 2 | S24 993 729 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |
| Oturoa Lake No. 4 | S24 982 712 | Lowland lake, flax and reed swamp<br>SSBI ranking – high |
| Oturoa Lake No. 5 | S24 981 707 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |

| Lake | Reference | Importance |
|---|---|---|
| Oturoa Lake No.3 | S24 987 718 | Lowland lake, shrub, flax, reed, rush and sedge swamp<br>SSBI ranking – high |
| Pakihi Road Dam | S20 127 919 | Lowland lake, rush and sedge swamp<br>SSBI ranking – moderate high |
| Parihauhau dam No. 3 | S21 040 618 | Lowland lake, reed swamp<br>SSBI ranking – moderate high |
| Pine Pond (Pirie Pond) | S24 023 879 | Lowland lake, shrub, flax and reed swamp<br>SSBI ranking – moderate high |
| Pukepuke Lagoon Conservation Area | S24 025 937 | Lowland lake, broadleaved tree, flax, reed, rush and sedge and grass swamp<br>SSBI ranking – outstanding |
| Reporoa Bog | U21 785 750 | Tarn, restiad bog and tussockland, montane swamp<br>SSBI ranking – outstanding |
| Tama lakes | T20 351 193 | Montane lake<br>SSBI ranking – outstanding |
| Taonui wetland | S21 164 605 | Lowland lake, shrub, flax, reed, rush and sedge swamp<br>SSBI ranking – high |
| Te Kapu Dam 1 | S22 176 431 | Lowland lake, rush swamp<br>SSBI ranking – moderate high |
| Te Kapu Dam 2 | S22 176 431 | Lowland lake, rush swamp, rush and sedge swamp<br>SSBI ranking – moderate high |
| Trig U Tarns | U21 843 664 | Tarn, restiad bog and tussockland, cushion bog<br>SSBI ranking – outstanding |
| Westmere Lake | R22 810 438 | Lowland lake, broadleaved tree, rush and sedge swamp<br>SSBI ranking – moderate high |

## SSBI Habitat Glossary of Terms

### Outstanding (1)

1. Occurrence of an endangered endemic species.
2. Areas important to nationally vulnerable or internationally uncommon species (breeding and/or migratory).
3. Ecosystem or example of an original habitat type which is nationally rare.
4. Rare national example of a sequence or mosaic.

### High (2)

1. Occurrence of a vulnerable endemic species.
2. Important habitat of a nationally rare species or presence of regionally rare endemic species.

3. Example of a nationally uncommon habitat, sequence or mosaic.
4. Vegetation/habitat that is rare in that Ecological Region.

**Moderate-High (3)**

1. Occurrence of a rare endemic species, or regionally threatened species, or endemic species of limited abundance throughout the country.
2. A habitat or sequence which is rare in that Ecological District.
3. An area where any particular species is exceptional in terms of say abundance or habitat.
4. Sizeable examples of common vegetation types found within the Ecological District.
5. Forms ecoogical buffers, linkages or corridors to significant habitats of indigenous flora and fauna.
6. Good representative example of a habitat type (including landform) that is common in the Ecological District.

**Moderate (4)**

Small sites support good numbers of species which are typical of a widespread habitat within an ecological region/district and which has a full canopy structure.

**Potential (5)**

1. Examples of an early secondary succession where the vegetation is dominated by naturally established exotic plants and where better examples exist in the Ecological District.
2. Sites that although containing indigenous vegetation, are essentially human-made and are of recent origin e.g. wetlands that were created from farm ponds.

**Definitions of Lake Types**

This includes any associated surrounding vegetation.

| | |
|---|---|
| L1 Tarn | very small, generally high altitude, low-nutrient lakes, usually occupying basins formerly scoured by glacial ice; silt veneered rock bottom, often with *Isoetes.* |
| L2 Montane Lake | lakes located above 600m altitude, usually of glacial, tectonic or volcanic origin; often large and deep and low in nutrients; often with the macrophytes *Lilaoepsis, Limosella* and *Glossostigma*. |
| L3 Lowland lake/pond | freshwater lake located below 600m altitude, non-fluctuating, diverse origins, substrates and depths, but frequently with silty bottom, shallow and nutrient-rich; often culturally modified. |

| | |
|---|---|
| L4 Lowland lake | freshwater lake located below 600m altitude, fluctuating, diverse origins, substrates and depths, but frequently with silty bottom, shallow and nutrient-rich; often culturally modified. |
| L5 Ephemeral montane pool | |
| L6 Ephemeral lowland pool | |
| B1 Forest Bog | freshwater, nutrient poor, acidic wetlands dominated by trees and shrubs of the genera *Halocarpus, Lepidothamnus, Lagarostrobos* (all formally *Dacrydium), Podocarpus, Libocedrus* and *Nothofagus*. |
| B2 Shrub Bog and Heathland | freshwater, nutrient-poor, acidic wetlands dominated by shrub podocarps (*Phyllocladus* and *Halocarpus*), heaths of the family Epacridaceae, and manuka. |
| B3 Restiad Bog and Tussockland | freshwater, nutrient-poor, acidic wetlands, variable according to temperature and wetness, including red tussock grassland, *Sphagnum* moss, rushland (restiads and others) and fernland (*Gleichenia*). |
| B4 Cushion Bog | freshwater, nutrient-poor, acidic montane to alpine wetlands, with vegetation adapted to low temperature consisting of low-growing, dense, cushion-shaped plants such as *Donatia, Gaimardia, Phyllachne* and *Oreobolus*. |
| S1 Podocarp Swamp | freshwater, nutrient-rich wetlands dominated by podocarp trees (kahikatea and matai). |
| S2 Shrub Swamp | fresh, nutrient-rich wetlands characterised by the abundance of shrubs, including manuka, *Coprosma* and *Olearia.* |
| S3 Broadleaved tree Swamp | freshwater, nutrient-rich wetlands pukatea and swamp maire, willows and cabbage trees. |
| S4 Flax Swamp | freshwater, nutrient-rich wetlands dominated by flax (*Phormium tenax*), sedge (*Carex Secta)* and toetoe. |
| S5 Reed Swamp | freshwater, nutrient-rich wetlands, predominantly raupo. |
| S6 Rush and Sedge Swamp | freshwater, nutrient-rich wetlands consisting of rushes and sedges belonging mainly to the genera *Juncus, Carex* and *Eleocharis*. |

| | |
|---|---|
| S7 Grass Swamp | freshwater, nutrient-rich wetlands dominated by introduced grasses particularly *Glyceri, Phalaris* and *Zizania latifolia*, in floodplain and riparian habitats once dominated by kahikatea, flax and raupo. |
| S8 Montane Swamp | freshwater, nutrient-rich wetlands fed typically by emerging underground water and supporting a diverse herbaceous vegetation particularly bryophytes, grasses and sedges (*Carpha, schoenus*) and herbs of the genera *Celkmisia, Senecio, Ranunculus* and *Montia*. |
| S11 Sedge Swamp | mesotrophic bog or swamp dominated by *Baumea* and/or *Schoenus* sedges. |

# GLOSSARY

This glossary is included to explain Maori words and technical terms in the Plan. Explanations of Maori terms have been taken from the Regional Policy Statement for Manawatu-Wanganui. Definitions in *italics* are those as per Section 2(1) of the Resource Management Act 1991 or otherwise stated and are subject to amendment by the Act.

**accelerated erosion** means soil erosion occurring at a rate exceeding the rate of natural weathering; and commonly due to human activity.

**amenity values** *means those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.*

**agricultural chemical (agrichemical)** any substance, whether inorganic or organic, human-made or naturally occurring, modified or in its original states, that is used in any agriculture, horticulture or related activity, to eradicate, modify or control flora and fauna. For the purposes of this Plan agricultural chemical includes animal remedies, but excludes fertilisers.

**agricultural effluent** means

a. wastewater and/or sludge from dairysheds, piggeries or feedlots;

b. sludge from agricultural wastewater treatment ponds; or

c. poultry farm litter or wastewater.

**artificial watercourse** has the same meaning as in the interpretation of river in the Act (refer to river below); and includes irrigation canals, water supply race, canals for the supply of water for electricity power generation, and farm drainage canals, or similar.

**bed** *in relation to any river-*

*(i)* *For the purposes of esplanade reserves, esplanade strips, and subdivision, the space of land which the waters of the river cover at its annual fullest flow without overtopping its banks:* and

*(ii)* *In all other cases, the space of land which the waters of the river cover at its fullest flow without overtopping its banks.*

**benthic** living on or in the bed of streams, rivers, lakes and the sea.

**best practicable option** *in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to -*

*(a) The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and*

*(b) The financial implications, and the effects on the environment, of that option when compared with other options; and*

*(c) The current state of technical knowledge and the likelihood that the option can be successfully applied.*

**coastal foredune** for the purpose of this Plan, means the strip of land between the coastal marine area and a line roughly parallel with the beach, extending 200 metres inland of the first line of vegetation, south of the Whanganui River.

(Note: Normally on the west coast dunes, the first line of vegetation includes sand binding species such as pingao, spinifex or marram grass).

**coastal marine area** *means the foreshore, seabed, and coastal water, and the air space above the water -*

*(a) Of which the seaward boundary is the outer limits of the territorial sea:*

*(b) Of which the landward boundary is the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of -*

*(i) One kilometre upstream from the mouth of the river; or*

*(ii) The point upstream that is calculated by multiplying the width of the river mouth by 5.*

**contaminant** *includes any substance (including gases, liquids, solids, and micro-organisms) or energy (excluding noise), or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat -*

*(a) When discharged into water, changes or is likely to change the physical, chemical or biological condition of water; or*

*(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.*

**controlled activity** *means an activity which -*

*(a) Is provided for, as a controlled activity, by a rule in a plan or proposed plan; and*

*(b) Complies with standards and terms specified in a plan or proposed plan for such activities; and*

*(c) Is assessed according to matters the consent authority has reserved control over in the plan or proposed plan; and*

*(d) Is allowed only if a resource consent is obtained in respect of that activity.*

A resource consent is required for these activities and the Plan sets out the information required with the application. The Council must grant applications for controlled activities if the activity complies with standards and terms specified in the rule. The assessment of environmental effects with applications for controlled activities is only required to address those matters specified in the Plan over which the Council has reserved control.

**cultivation** means preparing the soil for growing a crop or pasture, and the planting, tending and harvesting of that crop.

**diadromous** fishes that migrate between fresh and salt water, in either direction, not necessarily in relation to spawning.

**discharge** *includes emit, deposit, and allow to escape.*

**discharge permit** has the meaning set out in Section 87 of the RMA 1991:
*a consent to do something (other than in a coastal marine area) that otherwise would contravene section 15* of the Resource Management Act.

**discretionary activity** *means an activity -*

*(a) Which is provided for, as a discretionary activity, by a rule in a plan or proposed plan; and*

*(b) Which is allowed only if a resource consent is obtained in respect of that activity; and*

*(c) Which may have standards and terms specified in a plan or proposed plan; and*

*(d) In respect of which the consent authority may restrict the exercise of its discretion to those matters specified in a plan or proposed plan.*

A resource consent is required for these activities and the Plan sets out the information required with the application. The Council has the discretion to grant the consent and impose conditions, or decline the application. The application will be assessed in accordance with Section 104 of the Act, and policies specified in the Plan. The provisions in the Plan may limit the scope of the Council discretion to specified matters.

**effect**

has the meaning set out in Section 3 of the RMA 1991:
*... unless the context otherwise requires, the term "effect" includes:*

*(a) Any positive or adverse effect; and*

*(b) Any temporary or permanent effect; and*

*(c) Any past, present, or future effect; and*

*(d) Any cumulative effect which arises over time or in combination with other effects - regardless of the scale, intensity, duration, or frequency of the effect, and also includes:*

*(e) Any potential effect of high probability; and*

*(f) Any potential effect of low probability which has a high potential impact.*

**environment**

*includes:*

*(a) Ecosystems and their constituent parts, including people and communities; and*

*(b) All natural and physical resources; and*

*(c) Amenity values; and*

*(d) The social, economic, aesthetic, and cultural conditions which affect the matters stated in*

*paragraphs (a) to (c) of this definition or which are affected by those matters.*

**erosion** means the wearing away of the earth's surface by physical processes, e.g. the action of water, wind, etc.

**eutrophication** means the process of nutrient enrichment in rivers, lakes and wetlands. Eutrophication is a natural process, but can become a problem when nutrient inputs become too large (accelerated) as a result of human activities and landscape modification. High nutrient inputs can result in large-scale algal growths in lakes. These growths die and rot, degrading amenity values and reducing the life-supporting capacity of the lake water.

**extreme rainfall event** for the purposes of DSW Rule 1 means a rainfall event with a one in ten year return period, or an accumulation of daily rainfall over a period of a month, exceeding that recorded over the past ten years.

**feedlot** an area of concrete or other compacted material where there are concentrated groups or numbers of animals that are held for the purpose of feeding. These areas can be used for feeding or taking pressure off saturated paddocks. This definition excludes sheep or cattle yards, or the housing of animals in a stable.

**fertiliser** any substance that is suitable for sustaining or increasing the growth, productivity or quality of plants by the provision of essential nutrients, provided the substance is free from human and animal faecal matter and any pathogens.

Note: Fertiliser does not include agrichemicals as defined in this Plan nor any industrial by-products.

**galaxiids** small fishes that occur in Australia, New Caledonia, Lord Howe Island, New Zealand, Chile, Argentina, Tierra del Fuego, Falkland Islands and South Africa. There are thirteen species in New Zealand, including the Kokopu, Koaro, Inanga, and mudfish. Many galaxiids spend their whole lives in fresh water, but several species (diadromous species) spend part of their lives in the sea, migrate to fresh water as small juveniles, and grow to maturity and later spawn in fresh water.

**groundwater** subsurface water that occurs beneath the water table in geologic formations that are fully saturated.

**half median flow** for the purpose of this Plan, half median flow is used to define the upper limit of 'low flows'. It is simply half the calculated median flow.

**indigenous vegetation** means vegetation native to New Zealand.

**industrial and trade premise** means

a. any premises used for any industrial or trade purposes; or

b. any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste-management purposes, or used for composting organic materials; or

c. any other premises from which a contaminant is discharged in connection with any industrial or trade process

and does not include any production land.

**in-stream values** include

a. physical characteristics of the watercourse that affect the value of aquatic habitat quality; and

b. intrinsic values; and

c. recreational values; and

d. cultural values

but does not include:

e. economic values.

**intrinsic values** *in relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right including-*

*(a) their biological and genetic diversity; and*

*(b) the essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience.*

**issue** an issue is:

a. a matter relating to actual or potential unsustainable management of a natural or physical resource in the Region; or

b. a matter required to be addressed in the Plan by the Regional Policy Statement or the Resource Management Act.

**iwi** a political unit of Maori social and economic organisation comprised of many sub groupings (hapu). A purpose oriented confederation based on genealogical ties.

**iwi authority** *the authority which represents an iwi and which is recognised by that iwi as having authority to do so*.

**kaiawa** food found in and around rivers and streams.

**land** includes land covered by water and the airspace above land: (but for the purposes of this Plan, does not include the beds of rivers or lakes, or the coastal marine area).

**l/s** litres per second.

**$m^3$/day** cubic metres per day.

**mahinga kai** areas and locations where food of any sort and type is gathered, grown or hunted, including forests, lakes, rivers, streams, swamps and wetlands, traditional gardening plots etc.

**maintenance** of a structure means to keep or restore a structure to a state of good repair and includes the reconstruction or alteration of part of a structure, provided that:

i. the maintenance does not result in any increase in the area of artificial watercourse occupied by the structure; and
ii. the maintenance does not change the character, scale or intensity of any effects of the structure on the environment (except to reduce any adverse effects or to increase any positive effects).

Maintenance does not include extending, replacing, removing or demolishing the entire structure.

**mauri** the essence of all being inherent in all things, both animate and inanimate.

**mean annual flow** the arithmetic mean of the mean daily flow over a period of one year (1 January to 31 December).

**mean high water springs** means the water mark of the average of each pair of successive high waters during that period of about 24 hours

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| | in each semi-lunation (approximately every 14 days), when the range of tides is the greatest. |
| **median flow** | flow in the stream or river which is exceeded 50% of the time. The median flow is used as a measure of 'typical flow', and is calculated from analysis of long term flow records at a particular river site. |
| **method** | the practical action by which a policy is implemented. It is what needs to be done to put a policy into effect and includes rules, procedures or programmes. |
| **microbial contamination** | means contamination by any form of micro-organism that maybe of concern to health. |
| **minimum flow** | where used in SW Policy 6, "minimum flow" has the meaning given in the Interpretation of the National Water Conservation (Manganui o te Ao River) Order 1988. This is:<br><br>*the mean of the annual minima of the 7-day flow, as estimated by the Rangitikei-Wanganui Catchment Board, where "7-day flow" means the mean flow over any 7-day period.* |
| **national water conservation order (NWCO)** | has the meaning set out in Section 423 of the RMA 1991:<br>*a national water conservation order made under Section 20D of the Water and Soil Conservation Act 1967, and in force immediately before the date of commencement of this Act, shall be deemed to be a water conservation order made on the same terms under section 214.* |
| **natural character of the environment** | the qualities of the environment that give it recognisable character. These qualities may be ecological, physical, spiritual, cultural or aesthetic in nature. They include modified and managed environs. |
| **non-complying activity** | *non-complying activity means an activity which -*<br><br>*(a) Is provided for, as a non-complying activity, by a rule in a plan or proposed plan; or*<br><br>*(b) Contravenes a rule in a plan or proposed plan;*<br><br>*and is allowed only if a resource consent is obtained in respect of the activity.* |

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| | This category includes activities which the Plan states are non-complying or which contravene a rule in a plan. This category does not include those activities that are specifically prohibited in a rule. Applications for resource consents can be made and assessed on their individual merit. |
| **non-point discharge** | run-off or leachate from a non-discrete source, onto or into land, or a water body. |
| **normal flow** | where used in SW Policy 6, "normal flow" has the meaning given in the Interpretation of the National Water Conservation (Manganui o te Ao River) Order 1988. This is:<br><br>*the actual flow at that point, plus any abstractions or diversions from the river or stream and its tributaries upstream of the point, less any discharges into the river or stream or its tributaries upstream of that point, except that no account shall be taken of discharges into the Orautoha Stream at or about map reference NZMS 260 S20:057014 in accordance with the notified use authorising the Raetihi Power Scheme.* |
| **objective** | a statement of what is to be achieved. It is a desired result, end state, situation or condition aimed for. |
| **offal** | the less valuable edible parts of a carcass, especially the entrails and internal organs. |
| **permitted activity** | *an activity that is allowed by a plan without a resource consent if it complies in all respects with any conditions (including any conditions in relation to any matter described in section 108 or section 220) specified in the plan*.<br><br>No resource consent is required to undertake these activities provided they comply with all conditions set out in the relevant rule. |
| **pit latrine** | a dry vault with an unlined excavation in natural ground of a minimum depth of 1.2 metres, receiving excreted material without water carriage. |
| **policy** | a statement which guides or directs decision-making. It contains a general course of action which helps achieve the desired result. It is what needs to be done to achieve an objective. |
| **prohibited activity** | *an activity which a plan expressly prohibits and describes as an activity for which no resource consent shall be granted.* |

**public land** means land to which the public has free and unrestricted access at the time an activity is undertaken in accordance with a rule in this Plan.

**reasonable mixing** is the length of a river reach downstream of a discharge point, or an area around a discharge point in a lake, where standards are allowed to be exceeded without compromising overall policy objectives. Note that reasonable mixing does not necessarily equate with full mixing; or with waste assimilation through natural treatment within the receiving water.

**resource consent** *a consent for an activity that would otherwise contravene the Act*.

**riffle** a shallow part of a stream where the water flows brokenly, or a patch of waves or ripples on water.

**riparian management** means the collection of activities and practices that can be applied to the riparian margin, in order to improve the natural characteristics and functioning of the water body itself as well as the riparian margin.

**riparian margin** means a strip of land adjacent to a waterway which is frequently moist, and which generally extends from the perceived change in contour of the flood plain to the water body itself.

**river** *a continually or intermittently flowing body of fresh water; and includes a stream and a modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).* For the purposes of LM Rule 2, a river must either be permanently flowing or have a bed width in excess of two metres or more.

**river flow** where used in SW Policy 5, "river flow" has the meaning given in the Interpretation of the National Water Conservation (Rangitikei River) Order 1993. This is:

*means for any given point on the Middle River and Upper River—*

*(a) The mean daily flow occurring at that point; plus*

*(b) The sum of abstractions from the Upper and Middle River upstream of that given point expressed as a daily mean, but not including any abstraction from the Moawhango River at Moawhango Dam*

*(approximate map reference Infomap 260 T20/471 962) for hydro-electric power generation purposes:*

where used in SW Policy 3, "river flow" has the meaning given in the Interpretation of the National Water Conservation (Makuri River) Notice 1990. This is:

*"**River**" means the Makuri River itself from its source (approximate map reference NZMS 260 Sheet U24 737804 and 734804) to its confluence with the Tiraumea River (approximate map reference NZMS 260 Sheet T24 568772), together with all of its tributaries, including the Makuri-iti River.*

*"**River flow**" means for any given point on that River:*

*(a) the instantaneous flow occurring at that point; plus*

*(b) the sum of abstractions from the River and its tributaries upstream of that given point expressed as an instantaneous flow.*

**sewage** means the liquid wastes of a community, including toilet wastes, sullage, and trade wastes.

**sewage effluent** the liquid effluent from sewage treatment processes, including greywater systems.

**sewage fungus** growths of bacteria and/or fungi responding to increased concentrations of organic material in the water.

**sewage sludge** the material settled from sewage during a treatment process and includes composted sewage sludge.

**slash** means any leaves, branches, parts of trees or waste trees remaining as a result of vegetation clearance.

**soil conservation** means the same as is defined in the Resource Management Act; or in the absence of a definition in the Resource Management Act means the management of land to maintain New Zealand's soil and water resources, and includes:

a. the maintenance of the region's soil resources to retain sustainable land use options for present and future generations,

b. the maintenance of catchments to provide a high quality water resource for downstream users,

c. land management practices that further enhance the protection of waterways from suspended sediments, nutrient, harmful micro-organisms and other pollution,

d. the mitigation of the impacts of land related hazards including flooding, subsidence and erosions,

e. the maintenance of aesthetic, scientific and cultural values related to land and water.

(Note: This definition is adapted from the 1987 National Water and Soil Conservation Authority (NWASCA) "Soil Conservation Policy" (NWASCA Circular No. 1987/13).

**soil disturbance** the disturbance of land surfaces by any means, that will result in increased exposure of land or soil to erosive processes and effects, or facilitate flooding or subsidence, or cause deposits in rivers and streams; and **excludes** cultivation; or situations where land surface disturbance is incurred during normal maintenance of roads, tracks, railway lines, and public utility networks; or construction or maintenance of drains or fences; or direct drilling into the ground; or within domestic gardens; and **includes** the activities associated with mining and quarrying.

(Note: Maintenance of roads, tracks, railway lines, and public utility networks includes grading, clearance of drains and clearance of slips; but does not include widening if new cuttings, excavations or earthworks are involved.)

**soil quality** means the ability of the soil to maintain biological productivity, plant and animal health.

**taiapure** the Governor-General may declare areas of New Zealand waters to be taiapure by Order in Council published in the *Gazette*. They may be areas that have customarily been of special significance to any iwi or hapu either as a source of food or for spiritual or cultural reasons. Declaration of taiapure is enabled by Part IIIA of the Fisheries Act, 1983.

**take** an abstraction of water from surface water or groundwater.

**tangata whenua** people of the land; *in relation to a particular area, means the iwi, or hapu, which holds mana whenua over that area*.

**taonga** all things prized or treasured, both tangible and intangible.

**te kore** means *"the nothingness"* - a concept in Maori cosmology (origins of the universe) relating to the many stages of nothingness which proceeded *"nga po"*, the many nights,

which in turn proceeded the emergence of *"te ao marama"*, or the world of light we now inhabit.

**territorial authority** *a district council or a city council (as defined by the Local Government Act, 1974)*.

**untreated agricultural waste** means leachate from silage and waste from dairysheds, piggeries, poultry farms and feedlots that has undergone:

a. no treatment; or

b. a physical process only.

**untreated human sewage** means toilet wastes that have undergone:

a. no treatment; or

b. a physical process only, including

i. screening, including milliscreening;
ii. comminution;
iii. grit removal;
iv. settlement; or
v. any combination of the above.

**urban area** an area located within a city or town.

**vegetation clearance** means the destruction of vegetation by any means, including cutting, burning, clearing or spraying; and **includes** clear felling of forest; and line clearance by bulldozer or similar machine for fences or planting; but **excludes** clearance of agricultural and horticultural crops, pasture, forest thinnings or coppicing, or any plant defined as a plant pest; or clearance of tracks for the use of foot traffic only; or any clearance for the purposes of a recognised river control scheme or any clearance for the normal maintenance of existing roads, tracks, fire water points, fence lines, railway lines and public utility networks; or the clearance of isolated or scattered manuka or kanuka regrowth on productive pasture; or clearance associated with authorised river crossings; or the clearance of any indigenous vegetation understorey beneath plantation forest.

(Note: Maintenance of existing roads, tracks, fire water points, fence lines, railway lines and public utility networks includes the trimming of adjacent vegetation; but does not include vegetation clearance for new installations, roads, or access ways.)

**waahi tapu** sites, areas or localities associated with tapu.

**water** *(a) Means water in all its physical forms whether flowing or not and whether over or under the ground:*

*(b) Includes fresh water, coastal water, and geothermal water:*

*(c) Does not include water in any form while in any pipe, tank, or cistern:*

**water permit** has the meaning set out in Section 87 of the RMA 1991.

*a consent to do something (other than in a coastal marine area) that otherwise would contravene Section 14* of the Resource Management Act.

**water run-off controls** include, but are not limited to, cut-off drains, culverts, sediment traps, water tables and vegetative buffer strips designed to prevent scouring, gullying, erosion and off-site sediment discharges.

**wetland** *includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.* For the purpose of this Plan, it does not include wetlands designed for contaminant treatment.

**whey** is a concentrated material produced as a by-product of cheese and casein manufacture.

**whitebait** juvenile galaxiids that migrate into fresh water. Inanga (juvenile whitebait) are the most important species in the whitebait catch.

**woody vegetation** a general term for vegetation which assists soil conservation on steep slopes. Such vegetation tends to be deep rooted rather than surface rooted; be permanent (i.e. perennial not annual); and includes trees, shrubs and flaxes, and does not include grasses and smothering climbers.

**He Whakamarama A Nga Kupu Maori - Explanation of Maori Terms**

This section defines key Maori words. The Act defines many of these and gives meaning to them within the context of the Act itself. However, nga hapu and nga iwi of the Manawatu-Wanganui Region are concerned that a number of Maori terms are being assimilated into common usage in ways that change their meanings. Nga hapu and nga iwi have identified Maori concepts not included in the Act's interpretations which require consideration. For this reason the explanations below are included to give fuller interpretation within the context of their own understanding.

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| **ancestral lands** | land traditionally occupied by nga hapu and nga iwi, but which may or may not be currently in the ownership of nga hapu, nga iwi or individual Maori owners. Recognises the inalienable cultural and spiritual relationship Maori have with land. |
| **awa** | river, sometimes also refers to a localised stream. |
| **hapu** | a social, economic and political unit comprised of whanau (extended families) each recognising descent from a common ancestor(s). Whanau belonging to a hapu combine in socio-political and economic activities and live, or own land, in a localised area (a hapu boundary will exist within which are situated marae, kainga and pa - hapu gathering places and villages). A hapu may claim exclusive rangatiratanga in a specific area or over a specific resource. They may be represented by kaumatua, appointed spokespeople or marae committees. Hapu are major contributors to iwi affairs and are likely to be concerned with both localised matters that directly affect them as well as broader iwi issues. Dynamic in terms of social development (marae and housing developments), some hapu are reaching a stage where the mantle of iwi is being sought. Other hapu, `dormant' for some years, are beginning to assert themselves once more. |
| **kaimoana** | food found in and around the ocean and coastal marine area (includes all shellfish, fish, seaweed). |
| **kaitiakitanga** | spiritual and physical guardianship based on tikanga. |
| **korero** | story, narrative, discussion. |
| **maataitai** | (same meaning as kaimoana). |
| **mahinga maataitai** | areas and locations where seafood and fish are gathered including estuaries, the coastal marine area and the sea (fishing grounds). |
| **mana** | legitimacy to act in an authoritative and responsible capacity. |

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| **mana awa** | legitimacy to control, manage and administer rivers and their resources. |
| **mana moana** | legitimacy to control, manage and administer the sea and lakes and their resources. |
| **mana whenua** | legitimacy to control, manage and administer the land and its resources. |
| **marae** | spiritual, social, political, and economic gathering places of iwi, hapu, whanau and all manner of Maori groups and organisations. Marae may be whanau, hapu or iwi based. Strict observance of tikanga Maori ensures the retention of Maori language, lore, customs, values and beliefs. Many whanau, hapu and iwi initiatives are run from this marae base (eg. kohanga reo, kokiri administration centres, health clinics). |
| **moana** | the sea, ocean or lakes. |
| **nga** | the (plural) eg nga hapu and nga iwi = the tribes. |
| **nga hapu and nga iwi** | refers to the iwi and hapu that traditionally existed and continue to exist within the Manawatu-Wanganui Regional Council boundaries. |
| **rahui** | a social system of prohibition which recognises the tapu (see discussion on tapu in body of section) state of a resource or used as a regulatory device to ensure wise management of a resource. |
| **rangatiratanga** | expression of chiefly authority and legitimacy based on mana and tikanga. |
| **rohe** | iwi, hapu or whanau boundary or locality in which each asserts its mana. |
| **taonga raranga** | resources highly prized for use in weaving and other traditional handcrafts including pingao, harakeke, kiekie, paruparu (certain types of mud) and plants used for dyeing purposes. |
| **tapu** | a state of protection from unnecessary contamination. |
| **tauranga waka** | landing place of waka (canoes) – may be a place still used or a particular area in which one of the migratory canoes belonging to the ancestors of the Maori landed or was lain to rest. |
| **tikanga Maori** | social norms, practices and lore adhered to by Maori. |

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| **Te Tiriti o Waitangi** | the Treaty of Waitangi - refers to the Maori text which most iwi and hapu signed and which contains for Maori the fullest expression of the spirit (principles) of the Treaty. |
| **urupa** | graveyard, burial site - can include registered and unregistered graveyards or places where skeletal remains are kept (caves, hollow trees etc). Tapu by nature of being associated with death. |
| **waahi tupuna** | sites, areas or localities of historical and spiritual significance to whanau, hapu or iwi but not necessarily tapu sites. Important pathways, village sites, boundary indicators etc are included as waahi tupuna. |
| **wairua** | spiritual medium, spirituality. |
| **whanau** | basic unit of Maori social structure. An extended family comprising children, parents, grandparents and cousins, uncles and aunties, grand uncles and aunties once, twice or thrice removed. Today whanau members may live separately yet share a mutual existence, may be concerned with matters that impact on their whanau social, political, spiritual, economic, educational and cultural well being or customary land interests. Whanau spokespeople will speak on their behalf. |
| **whenua** | land, the land. |