

CANTERBURY REGIONAL COUNCIL

WAIMAKARIRI RIVER REGIONAL PLAN

Report R04/7

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October 2004





Prepared under the Resource Management Act 1991

I hereby certify that this is a true and correct copy of the Waimakariri River Regional Plan prepared by the Canterbury Regional Council.

The Waimakariri River Regional Plan is a statutory regional plan prepared by the Canterbury Regional Council in accordance with the requirements of the Resource Management Act 1991.

This Plan was adopted at a meeting of the Canterbury Regional Council on 6 October 2004 and publicly notified on 16 October 2004 and is made operative from 23 October 2004.

The Common Seal of the Canterbury Regional Council was affixed in the presence of:

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CHAIRMAN**

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CHIEF EXECUTIVE
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Part 1 Background Information

1 Introduction

1.1 Plan Structure

This Plan is in three parts:

Part 1 Background Information

Chapter 1 is the introductory chapter. It contains the stated purpose, defines the scope, and outlines the structure of the plan. It also summarises what regional rules apply to which activities and provides some explanation of activity classes.

Chapter 2 sets out the statutory basis of this Regional Plan for the Waimakariri River, its tributaries and hydraulically connected groundwater. There are references to the legislative framework provided by the Resource Management Act 1991 (RM Act), to the Operative Canterbury Regional Policy Statement (RPS), the Transitional Regional Plan, the Proposed Regional Coastal Environment Plan, the Proposed Canterbury Natural Resources Regional Plan, and to district, iwi and other regional plans.

Chapter 3 describes the Waimakariri River Catchment where this Plan applies and outlines the characteristics and resource values of the catchment.

Part 2 Issue Resolution

Chapter 4 summarises the resource management issues addressed by this Plan.

Chapter 5 sets out the issues in relation to water quantity. Defines water allocation which includes: priorities; the protection to be given to rivers and lakes; the augmentation of the Cust River; and the circumstances where restrictions apply and consents are required for water takes, uses, diversions, dams and discharges.

Chapter 6 sets out the issues in relation to surface water quality. Defines the standards to be maintained, the restrictions to apply to discharges, and other measures to improve water quality.

Chapter 7 sets out the issues in relation to disturbances, structures, planting and damage or removal of plants, in river and lake beds. Defines circumstances under which no consents are required and the circumstances where restrictions apply and consents are required.

Part 3 Processes and Monitoring

Chapter 8 describes the processes to be used to deal with issues that cross local authority boundaries and issues between territorial authorities and between regions.

Chapter 9 outlines the monitoring strategy for the Plan, and specifies the review period of the Plan and the process for the review.

Chapter 10 sets out how to make an application for a water permit or a discharge permit or a land use permit, and the information to be provided in the application.

1.2 Plan Purpose and Scope

The purpose of this Plan is to promote the sustainable management of rivers, lakes and hydraulically connected groundwater, and river and lake beds in the Waimakariri River Catchment; to maintain and enhance the environment; and to achieve integrated management of these resources.

In particular, the Plan addresses the issues of:

- (a) competition for the use of water in the Waimakariri River, its tributaries and hydraulically connected groundwater;
- (b) the use of water from the Waimakariri River to augment flows in the Cust River to safeguard its life-supporting capacity;
- (c) point and non-point source discharges of contaminants to water bodies in the Waimakariri River Catchment;
- (d) land uses or activities in the beds of rivers and lakes in the Waimakariri River Catchment.

The Plan sets out issues and the objectives, policies, and methods for resolving the resource management issues. Not all of the methods involve regulation of activities. Some methods provide guidance for Environment Canterbury and provide guidance for others in undertaking activities to deal with the problems identified by the Plan. It is anticipated that the environmental results from the implementation of these policies and methods will include:

- (a) the preservation of the natural character of rivers, lakes and wetlands and protection of outstanding natural features and landscapes;
- (b) the protection of the instream values of rivers;
- (c) the upgrading of water quality, where it is currently low and the maintenance of water quality at its present level where it is currently high; and
- (d) provision made for the reasonable needs of people to be able to site structures in river and lake beds, to disturb river and lake beds and to plant, or disturb plants, in river and lake beds.

Other natural and physical resource management issues within the catchment will be dealt with in other plans (Refer to Section 2.2).

1.3 Area to which this Plan applies

This Plan applies to the Waimakariri River Catchment excluding the area seaward of Ferry Road which lies within the Coastal Marine Area (Figures 1 and 2). The catchment boundary is defined in Map 2.

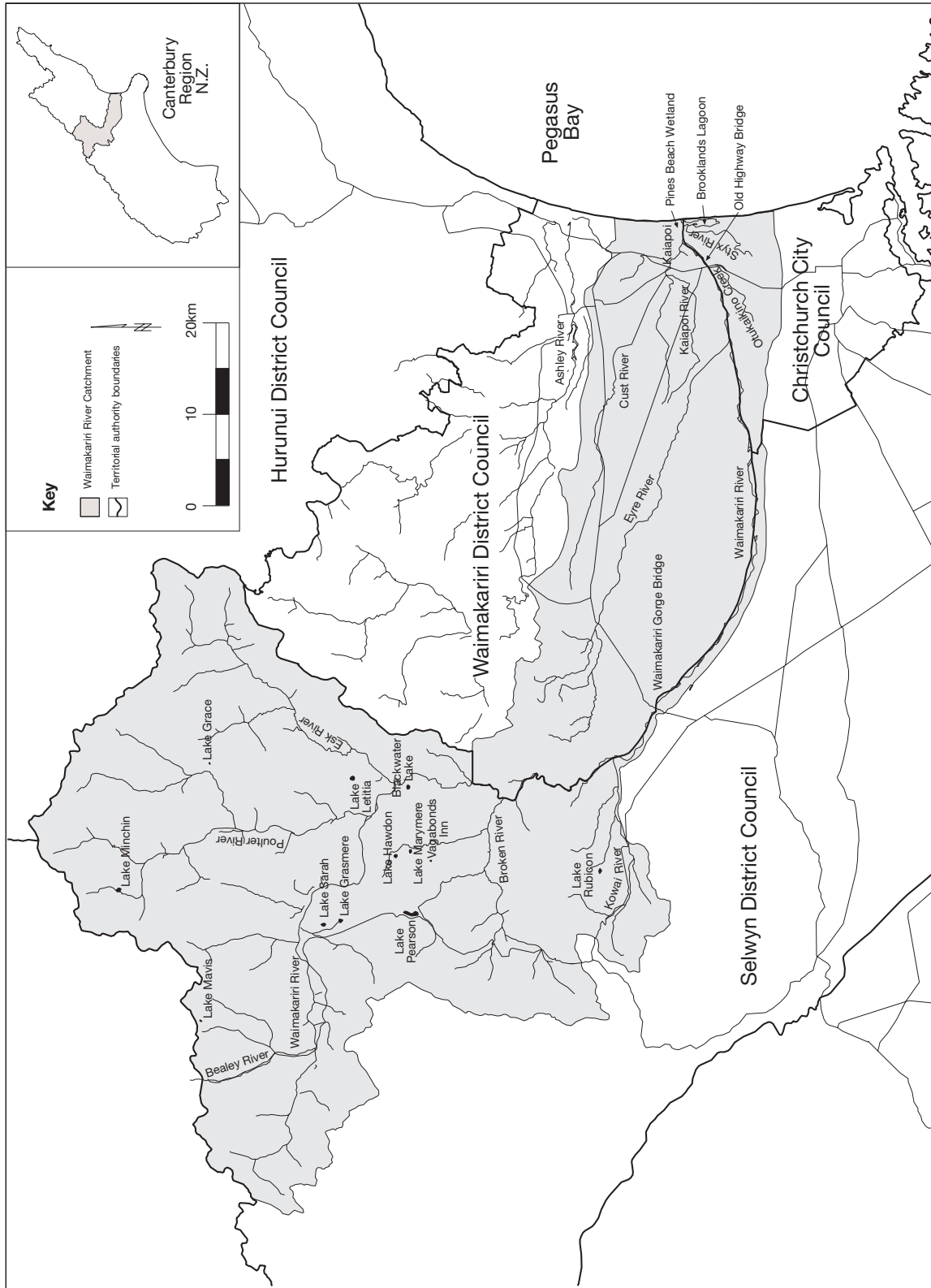


Figure 1 Map of the Waimakariri River and Catchment

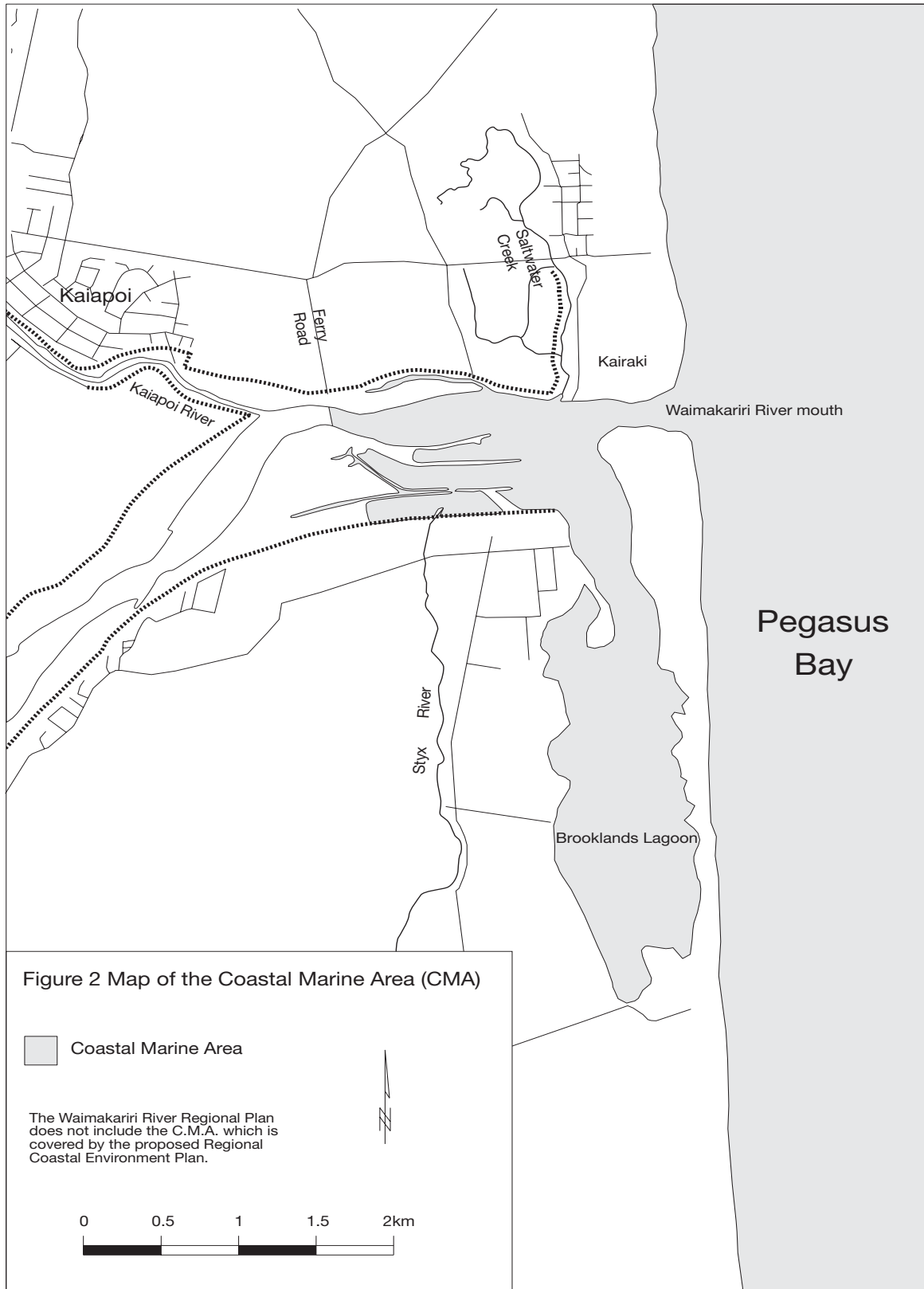


Figure 2 Map of the Coastal Marine Area

1.4 How to Use This Plan

Regulation of Activities

The Plan regulates the following activities within the Waimakariri River Catchment through regional rules:

- (a) The taking (abstraction) of water from the Waimakariri River or its tributaries or from hydraulically connected groundwater (Chapter 5, Rule 5.1 discretionary activity, Rule 5.3 non-complying activity, Rule 5.4 prohibited activity).
- (b) The use, diversion, discharge or damming of water in the Waimakariri River or its tributaries (Chapter 5, Rule 5.2 discretionary activity, Rule 5.3 non-complying activity, Rule 5.4 prohibited activity).
- (c) The discharge of contaminants into the Waimakariri River or its tributaries or onto or into land where the discharge can enter surface waters (Chapter 6, Rule 6.1 discretionary activity, Rule 6.2 non-complying activity).
- (d) The disturbance of the beds of rivers and lakes (Chapter 7, Rules 7.1, 7.2 and 7.3 permitted activities, Rule 7.4 discretionary activities and Rule 7.5 prohibited activity).
- (e) The introduction or planting, and the disturbance, removal, damage or destruction of plants or habitats in river and lake beds (Chapter 7, Rule 7.2 permitted activity, Rule 7.4 discretionary activities, Rule 7.5 prohibited activities).
- (f) The use, erection, reconstruction, placement, alteration, extension, removal or demolition of structures in river and lake beds (Chapter 7, Rule 7.3 permitted activities, Rule 7.4 discretionary activities, and Rule 7.5 prohibited activities).
- (g) The deposition of substances in river and lake beds (Chapter 7, Rule 7.2 permitted activities, Rule 7.4 discretionary activities and Rule 7.5 prohibited activities).
- (h) The reclamation or drainage of river and lake beds (Chapter 7, Rule 7.4 discretionary activity and Rule 7.5 prohibited activity).

The rules specify the conditions, standards and terms which must be met; matters, if any, to which Environment Canterbury has restricted its discretion; the effect on existing permits; and any exemptions from the rules. Activities covered by rules fall into six types: permitted, controlled, restricted discretionary, discretionary, non-complying, and prohibited. Refer to Appendix 1 at the back of the plan to find the precise meaning of terms used.

Application for Consents

Chapter 10 provides details on how to make a consent application and the information that must be provided with an application.

2 Planning Framework

2.1 The Resource Management Act 1991

The purpose of a regional plan is to assist a regional council to carry out any of its functions in order to achieve the purpose of the RM Act. The contents of regional plans are specified in Section 67.

The purpose and principles of resource management are set out in Part II of the RM Act. The use of italics in this document indicates a direct quote from the RM Act.

Purpose

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

In giving effect to this purpose, Environment Canterbury is subject to certain other obligations:

Matters of national importance —

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- (a) *The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
- (b) *The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*
- (c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
- (d) *The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*
- (e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga.*
- (f) *The protection of historic heritage from inappropriate subdivision, use and development.*

Other matters —

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to —

- (a) *Kaitiakitanga:*
 - [(aa) *The ethic of stewardship:*]
 - (b) *The efficient use and development of natural and physical resources:*

- (c) *The maintenance and enhancement of amenity values:*
- (d) *Intrinsic values of ecosystems:*
- (e) *Maintenance and enhancement of the quality of the environment:*
- (f) *Any finite characteristics of natural and physical resources:*
- (g) *The protection of the habitat of trout and salmon.*

Treaty of Waitangi —

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

The functions of regional councils are set out in Section 30. Those particularly relevant to this plan are reproduced here:

Functions of regional councils under this Act —

- (1) *Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:*
 - (a) *The establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region:*
 - (b) *The preparation of objectives and policies in relation to any actual or potential effects of the use, development, or protection of land which are of regional significance:*
 - (c) *The control of the use of land for the purpose of...¹*
 - (ii) *The maintenance and enhancement of the quality of water in water bodies ...*
 - (iii) *The maintenance of the quantity of water in water bodies ...*
 - (e) *The control of the taking, use, damming, and diversion of water, and the control of the quantity, level, and flow of water in any water body, including:*
 - (i) *The setting of any maximum or minimum levels or flows of water.*
 - (ii) *The control of the range, or rate of change, of levels or flows of water.*
 - (f) *The control of discharges of contaminants into or onto land, air, or water and discharges of water into water*
 - (g) *In relation to any bed of a water body, the control of the introduction or planting of any plant in, on, or under that land, for the purpose of:*
 - (ii) *The maintenance and enhancement of the quality of water in the water body.*
 - (iii) *The maintenance of the quantity of water in the water body...*
 - [(ga) *The establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity:]*
 - (h) *Any other functions specified in this Act.*

¹ Subsections (c) (i), (iv), (v), (d) and (e) (iii) and (g) (i), and (iv) are not quoted because they are not relevant to this plan.

2.2 Relationship with the Operative Canterbury Regional Policy Statement, Regional Plans and District Plans

Operative Canterbury Regional Policy Statement

The Operative RPS for the Canterbury region, in providing an overview of the resource management issues of the region, indicates the direction to be taken in regional plans. A regional plan shall not be inconsistent with the regional policy statement or any other regional plan in the region. A regional plan gives effect to the Regional Policy Statement.

This Plan closely follows, and is consistent with, the framework of the water and river and lake bed chapters of Environment Canterbury's Operative RPS. The plan has adopted the relevant issues, objectives, policies and methods of the Operative RPS but has modified them so that they are specific to the Waimakariri River Catchment and the particular circumstances within the catchment.

The Operative RPS provides for priority to be given through a regional plan to the water resources of the Waimakariri River Catchment for establishing water flow, level and allocation regimes, and in setting water quality standards.

The Operative RPS sets out matters of resource management significance to Tangata Whenua. These matters include water quality, water quantity, harvesting of mahinga kai, consultation and process issues. These have been integrated into this Plan.

Under the requirements of the RM Act this Plan can not be inconsistent with other regional plans. The rules in this Plan operate concurrently with those in any other operative or proposed plan. These plans are:

- (a) The Transitional Regional Plan.
- (b) The Transitional Regional Coastal Plan.
- (c) The Proposed Regional Coastal Environment Plan.
- (d) The Proposed Land and Vegetation Management Regional Plan Part IV Land Management Fires Canterbury Hill and High Country.
- (e) The Proposed Canterbury Natural Resources Regional Plan

Transitional Regional Plan

The Transitional Regional Plan, which came into effect on 1 October 1991 for the Canterbury region, has effect in the area covered by this proposed plan. It includes water quality standards for some of the surface waters in the Waimakariri River Catchment, and provisions regulating activities within riverbeds and watercourses. Now that the Waimakariri River Regional Plan is operative, the Transitional Regional Plan will be reviewed and provisions relating to water quality standards will be deleted. The Transitional Regional Plan also contains provisions for permitted activities (those activities with minor effects on the environment) subject to conditions allowing:

- (a) abstraction of water from groundwater, surface water and from irrigation schemes;
- (b) the diversion or discharge of natural water;
- (c) the disposal of animal effluent onto land;
- (d) the discharge of sewage tank effluent into the ground;
- (e) the discharge of land drainage and aquifer or bore test water;
- (f) the discharge of water tracers, cooling waters, storm water and water from swimming pools;

The Transitional Regional Plan also contains provisions relating to groundwater abstraction including making, altering or installing bores.

Groundwater is included in the Waimakariri River Regional Plan only to the extent that it is hydraulically connected with surface water bodies and where abstraction from groundwater has a significant flow depletion effect on rivers.

The parts of the Transitional Regional Plan defining the permitted activities identified in (a) to (f) above remain in force and will continue to apply in the Waimakariri River Catchment until such time as the provisions are withdrawn or superseded by provisions in the Proposed Canterbury Natural Resources Regional Plan. The provisions of the Transitional Regional Plan defining relevant permitted activities are detailed in Appendix 4 of this Plan.

Transitional Regional Coastal Plan

The Transitional Regional Coastal Plan, which came into effect on 1 October 1991 for the Canterbury region, has effect in the coastal marine area (CMA) adjacent to the area covered by this Plan. It contains provisions of the Operative Rangiora District Council District Scheme and the Operative Waimairi District Council District Scheme. These provisions have effect in the CMA defined in Figure 2. The Transitional Regional Coastal Plan will be superseded by the Regional Coastal Environment Plan when it becomes operative.

Proposed Regional Coastal Environment Plan

A Proposed Regional Coastal Environment Plan was notified in July 1994 and is expected to be operative by the end of 2005. It manages, amongst other things, the effects of activities in the Coastal Marine Area, which includes the Waimakariri River downstream of Ferry Road, and Brooklands Lagoon. It also regulates point source discharges, gravel excavation, reclamations of land, the erection of structures, and the operation of motorised vehicles at the southern end of Brooklands Lagoon. The Waimakariri River Regional Plan covers the area of the Waimakariri River Catchment upstream of the Coastal Marine Area.

Proposed Land and Vegetation Management Regional Plan

The Proposed Land and Vegetation Management Regional Plan Part IV was notified in October 1993. This proposed Plan, amongst other things, regulates fire as a land management tool on hill and high country land.

District Plans

These plans are prepared by territorial local authorities. They control subdivision and the effects of land use, including activities on the surface of the water and on the beds of rivers and lakes, in Selwyn, Waimakariri and Christchurch districts. In the methods sections of the Waimakariri River Regional Plan (sections 5.3.4, 6.3.3 and 7.3.4) there are provisions to be considered by the District Councils for implementation through their district plans.

Proposed Canterbury Natural Resources Regional Plan

The Proposed Canterbury Natural Resources Regional Plan (NRRP) is a plan that Environment Canterbury notified in 2002. The NRRP includes sections on air, water and land. The NRRP applies to the whole Canterbury region addressing issues on a regional or sub-regional basis. It does not apply to those issues specifically addressed by the Waimakariri River Regional Plan. The NRRP will be prepared in stages and eventually it will replace the Transitional Regional Plan and may also replace this and some other regional plans.

2.3 Iwi Management Plans

Iwi management plans are non-statutory documents that have been prepared by Tangata Whenua. Environment Canterbury, in preparing regional plans, must have regard to iwi management plans. Iwi management plans can provide mechanisms for implementing aspects of policy. For example, the process for managing the discovery of koiwi tangata; how any powers transferred will be discharged; and the joint management of sites and/or resources. They can also be a source of information that aids, but does not replace, consultation with Tangata Whenua during regional plan preparation or consideration of consents.

3 Resource Overview

3.1 Land Resources

The total land area in the Waimakariri River Catchment is 3654 km². Thirty-three percent is arable land (Land Capability Classes I to IV), 17% is mainly tussock and bush covered hill and high country (Class VI land), 4% is riverbed and 46% is steep mountain land (Class VII and VIII land), which has severe to extreme limitations for any form of productive use.

Urban centres of population within the catchment include Rangiora, Kaiapoi, Woodend, Belfast and Oxford. Most of Christchurch City lies just outside the catchment but on the floodplain of the Waimakariri River.

Land use on the plains is diverse. The shallow stony soils which comprise most of the plains support dryland sheep farming. Cropping is mainly confined to the free-draining deeper soils along the Eyre River and fringing the wetter soils on the lower plains. On the lower plains, high water tables limit farming primarily to dairy, beef or deer farming. Orcharding and other horticultural cropping is increasing in area on the plains. Life-style farms are a significant land use. The main limitations to increased production on the plains are the shallow soils which are in the majority, and the lack of an irrigation water supply.

The plains contrast sharply with the upper Waimakariri River Catchment basin, where high altitudes, long cold winters, and inhospitable terrain, severely limit agricultural production. These same features, so adverse to agriculture, add to the attraction and value of this area for outdoor recreation and tourism. The upper catchment contains the last remaining significant areas of relatively undisturbed indigenous ecosystems within the catchment.

3.2 Water Resources

The catchment water resources (Figures 1, 2 and 3) comprise:

- (a) rainfall;
- (b) ice and snow, alpine bogs and streams;
- (c) the flow of the Waimakariri River and tributary rivers which include:
 - Bealey River,
 - Esk River,
 - Poulter River,
 - Broken River,
 - Kowai River,
 - Eyre River,
 - Cust River,
 - Kaiapoi River,
 - Cam River,
 - Styx River, and
 - Otukaikino Creek (South Branch of the Waimakariri River);
- (d) a groundwater resource beneath the Plains which feeds the Cust, Cam, Kaiapoi, Styx, Otukaikino Creek, and other smaller streams on the lower plains;
- (e) more than twelve lakes and associated wetlands which include:
 - Blackwater,
 - Grace,

Grasmere,
Hawdon,
Letitia,
Marymere,
Mavis,
Minchin,
Pearson,
Rubicon;
Sarah, and
Vagabonds Inn

(f) Brooklands Lagoon²; and

(g) Pines Beach wetland.

The flow in the Waimakariri River³ is continuously recorded at the Old Highway Bridge where between 1967 and 1994 there were some 27 years of recorded flows indicating that the river has a mean flow of 124 cubic metres per second, flood flows which can exceed 4,000 cubic metres per second, and flows as low as 25 cubic metres per second. The mean annual daily low flow is 41.5 cubic metres per second, and mean annual instantaneous low flow is 41.0 cubic metres per second. Over 90% of the river flow is derived from precipitation in the upper catchment. Winter snow and ice is stored and released in spring contributing to higher flows in the river during this part of the year. The period of lowest flows occurs in late summer. Flood flows can occur at any time.

Water leaves the river below Halkett and recharges groundwater to the north and south of the river. The estimated range of this recharge is 3-12 cubic metres per second. A considerable groundwater resource is stored in the gravels beneath the plains and feeds a number of streams on the lower plains including the Avon and Heathcote Rivers.

Beneath the Waimakariri-Ashley Plain is a groundwater resource of great significance to the communities which live on the plain. It provides 90% of the area's drinking water, mostly without any treatment, and with the surface streams, as at March 2004, irrigates some 4,500 hectares.

The Waimakariri River presents a major flood hazard to Christchurch (316,000 people) which has developed on the south floodplain of the Waimakariri River and to Kaiapoi (9,500⁴ people), which has developed on the north floodplain. An extensive system of flood protection works has been developed on the lower river.

² *Brooklands Lagoon is outside the area covered by this plan. It is dealt with in the Proposed Regional Coastal Environment Plan*

³ *The flow of the Waimakariri River is recorded at the Old Highway Bridge which is downstream of abstractions from the Waimakariri River. Prior to notification of this Plan in 1996 abstractions for community scheme (domestic and stockwater) takes, were mainly continuous and were about 3.8 cubic metres per second in total. Prior to notification of this Plan, irrigation takes totalled about 2.8 cubic metres per second, but these only occurred in the irrigation season and varied according to the severity of the soil moisture deficit. Prior to this Plan, consent conditions required all irrigation to cease when the river flow was below 37 cubic metres per second measured at the Old Highway Bridge. None of the takes from the Waimakariri River were continuously recorded. To convert the flow record to a flow record unaffected by abstractions, 4 cubic metres per second has been added to the values of mean flow, lowest recorded flow, mean annual daily low flow and mean annual instantaneous low flow, calculated from the flow record at the Old Highway Bridge. Any difference as a result of irrigation abstractions from the river would be less than the river gauging error.*

⁴ *Populations usually resident in 2001.*

The Eyre River which drains foothills to the west of Oxford, bisects the plains between the Waimakariri and Ashley Rivers but rarely carries any surface flow in its reach across the plains.

Water is abstracted from the Waimakariri River for the Waimakariri Irrigation Scheme, three community stockwater schemes and for Darfield's community domestic supply. The Selwyn District Council scheme intake is at the Waimakariri Gorge. It takes water from the Waimakariri River and the Kowai River and provides stockwater to some 47,500 hectares. A second scheme at Halkett provides stockwater to some 17,000 hectares. The Waimakariri Irrigation Scheme and the Waimakariri District Council Stockwater Scheme have intakes at Browns Rock. The Waimakariri Irrigation Scheme provides water to 18000 hectares of the Waimakariri Ashley Plains. The stockwater scheme provides stockwater to some 44,000 hectares. Domestic water supply to Darfield comes from a gallery system in the bed of the Waimakariri River and to Springfield from the Kowai River.

About 20 cubic metres per second as at (Sept 2002) of the flow in the Waimakariri River is abstracted, 75% for irrigation and 25% for stockwater. The river is a potential source of water for further irrigation, groundwater recharge and part of Christchurch's urban supply. In contrast, water is abstracted from the plains tributaries mainly for irrigation. The peak abstraction allocation from the rivers in the Waimakariri River Catchment, at the time the assessment was made, is shown in Table 1.

Above the confluence of the Otukaikino Creek with the Waimakariri River there are no significant point discharges to the Waimakariri River. The Otukaikino Creek receives treated sewage effluent from the Belfast treatment system. The Otukaikino Creek flows into the Waimakariri River just above the SH 1 Motorway Bridge. At the Old Highway Bridge, the Waimakariri River receives trade waste from the Primary Producers Co-operative Society Ltd discharge. Below the confluence of the Kaiapoi River with the Waimakariri River, sewage effluent from the Kaiapoi treatment system is discharged via a small creek to the Waimakariri River.

The plains tributaries (Kaiapoi-Cam-Cust system, Styx and Otukaikino Creek; see Figure 3) were once the most important sources of mahinga kai in the catchment but their use for this purpose has declined as the plains were developed and the streams altered to control flooding and improve drainage. Pollutants in runoff and from direct waste discharge to these rivers and the drainage network feeding into them, devalue them as sources of mahinga kai. The community uses the plains tributaries to dispose of stormwater, treated trade wastes and treated sewage effluent.

Within the Waimakariri River Catchment, as at March 2004, there were 69 discharge permits to surface water, and 336 to land, mainly for stormwater, agricultural wastes and industrial wastes.

The Waimakariri River, primarily because of its location in relation to Christchurch, is the most heavily used river for recreation purposes in Canterbury with the possible exception of the Avon and Heathcote Rivers and their common estuary.

The Waimakariri River has potential for hydro-electric power generation, for groundwater recharge, and as a future source of water for Christchurch City. There is a small commercial eel fishery based on the river and there are opportunities for freshwater fish farming.

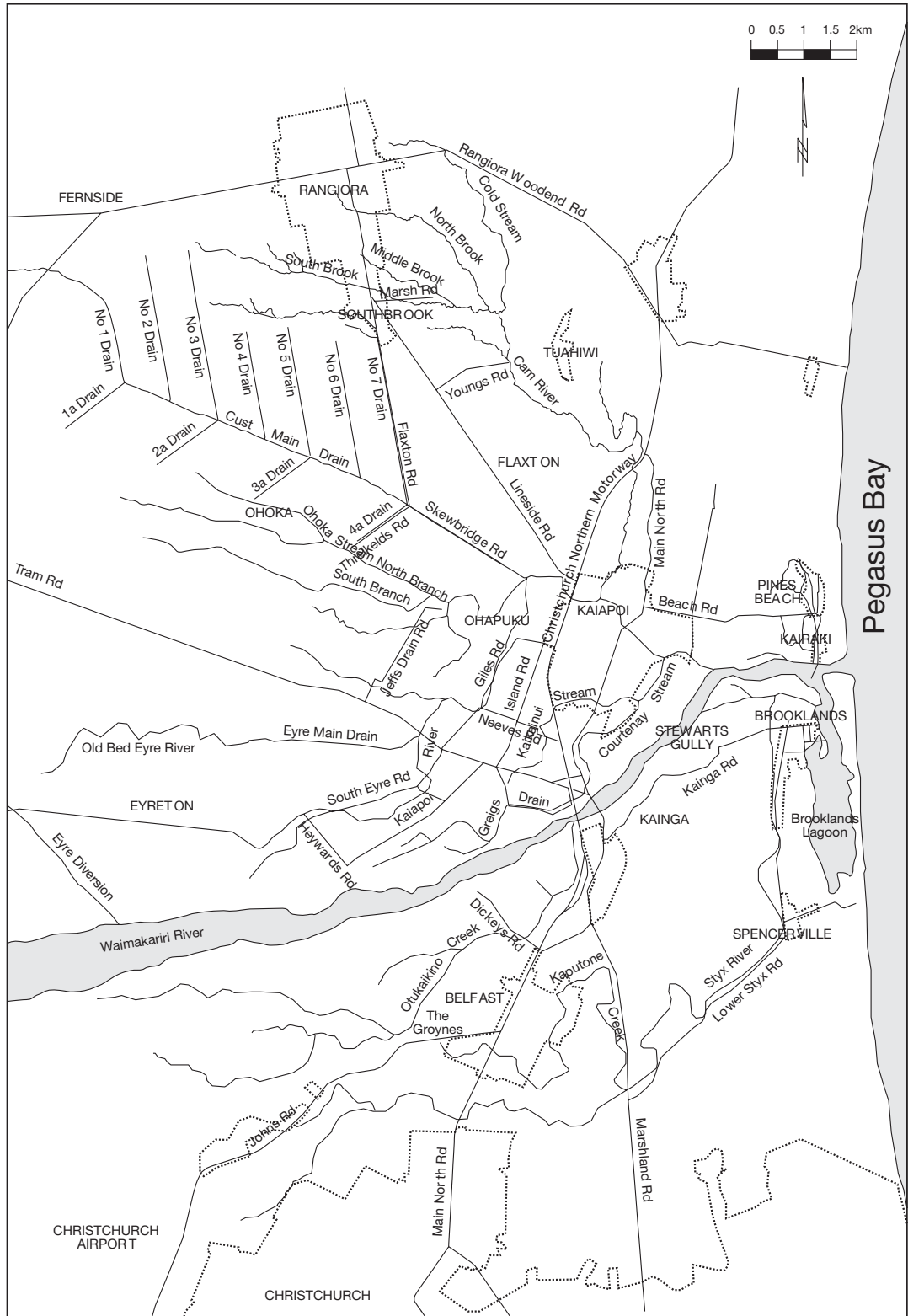


Figure 3 Geography of the Lower Plains Tributaries

TABLE 1 WATER PERMITS FOR SURFACE WATER TAKES AND HYDRAULICALLY CONNECTED GROUNDWATER TAKES WITHIN THE WAIMAKARIRI RIVER CATCHMENT

Water Resource	Maximum rate of take by surface takes (litres per second) (as at May 1996)⁵	Maximum rate of surface water depletion by groundwater takes (litres per second) (as at March 1995)⁶	Total (litres per second)⁷
Waimakariri River above Woodstock	67	not assessed	not assessed ⁸
Waimakariri River below Woodstock	6572 (19464)	20 (304)	6592 (19768) ⁹
Styx River	273	115	388
Kaputone Creek	179	0	179
Otukaikino Creek	314	76	390
Courtenay Stream	46	0	46
Greigs Drain	44	0	44
Kaiapoi River	130	511	641
Cust Main Drain	382 (475)	569 (215)	951 (690) ¹⁰
Cust River	249	43	292
No. 7 Drain	79	51	130
Ohoka Stream	36	403	439
Cam River	535	163	698
North Brook	87	111	198
Middle Brook	29	1	30
South Brook	0	81	81
Eyre River	50	not assessed	not assessed ¹¹

3.3 Other Resource Values of the Waimakariri River and Catchment

The source of the Waimakariri River is in the Main Divide of the Southern Alps amongst the spectacular scenery and natural landscape of Arthurs Pass National Park. Beyond the

⁵ The maximum rate of surface takes is calculated from the Regional Council's consents database. It is the sum of the maximum rates of authorised takes of individual water permits, assuming that all are exercised concurrently at their maximum rate of take.

⁶ The maximum rate of surface water depletion by groundwater takes is from the report "Effects of Groundwater Abstractions on Surface Water Flows in the Lower Waimakariri River and its Tributaries", Canterbury Regional Council Report R96/1, 1996. It is the sum of the estimated rate of surface water depletion, assuming that all authorised groundwater takes are exercised concurrently at their maximum rate of take.

⁷ The total is the sum of the adjacent two columns of figures, and gives an indication of the total authorised peak allocation from each water resource.

⁸ The total for the Waimakariri River above Woodstock is not relevant because of the very small quantity of water taken.

⁹ Figures in brackets show the maximum rate of take in September 2002.

¹⁰ Figures in brackets show the maximum rate of take in October 2003.

¹¹ The total for the Eyre River is not relevant because it seldom carries any surface flow.

National Park the river winds its way through the relatively little-modified Waimakariri basin with its scatter of attractive lakes, limestone outcrops and scenic backdrops before passing through a spectacular 25 kilometre gorge. It emerges from the gorge at Woodstock and flows to the sea in a wide braided riverbed with constricting narrow reaches at the Waimakariri Gorge Bridge and downstream of the motorway bridge.

In the catchment above Woodstock (Figure 4 and Map 1) the Waimakariri River and tributaries are an integral part of the landscape. Their unmodified form and natural setting contrast with other South Island rivers now controlled by dams and drowned by lakes. The natural untamed river and its landscape is sought after for jet boating, rafting, canoeing and a range of other outdoor recreation activities. The Waimakariri River system has a high degree of naturalness above Woodstock. Particular features of the high natural character of the upper river include: a relative lack of structures and other cultural modifications, high water quality, the presence of distinctive native wildlife, a sports fishery, indigenous vegetation in the beds and margins of the river, the predominance of natural sounds, a relatively unmodified aquatic ecosystem and unmodified flow characteristics.

The State Highway and railway through the upper catchment link Canterbury with Westland. Much of the upper catchment is included in Selwyn's District Plan as a scenic corridor. The upper catchment has very high natural values and the reach of the Waimakariri River between the Mt White bridge and the upper gorge has very high habitat value for wrybill plover.

Below Woodstock the Waimakariri River also possesses distinctive natural character, namely the natural braided pattern and open gravels of the mainstem; distinctive wildlife including the endangered wrybill plover and black-fronted tern; indigenous and sports fisheries; and relatively unmodified flow characteristics and aquatic ecosystems. This section of the river attracts jet-boaters, off-road vehicle users, salmon and trout fishers, picnickers, swimmers and others.

The river below its confluence with the Kaiapoi River is within the Coastal Marine Area, which is outside the area covered by this plan. The Coastal Marine Area includes Brooklands Lagoon, which is both a wildlife refuge and a source of game birds in season, and the Waimakariri River mouth, which is a magnet for fishermen and whitebaiters.

The plains tributaries are valued for their landscape and aesthetic appeal, as fisheries and wildlife habitat, for their amenity value and for the gathering of mahinga kai. The Groynes picnic area is the only part of the plains tributaries regularly used for contact recreation.

The high country, the Waimakariri River and its tributaries, and the coast provide many opportunities for recreation while the plains provide for the material needs of the community for food and fibre, and sites for housing and industry.

The rivers and lakes in the catchment are of great significance to Ngai Tahu, particularly the lower plains tributaries, which were a main source of mahinga kai. Some water bodies in the upper catchment were important for resourcing Ngai Tahu expeditions to the West Coast and are of historical significance to Ngai Tahu. As Kaitiaki, Tangata Whenua will exercise guardianship over native species, (currently only eels), under the South Island Customary Fishing Regulations Act 1998 to protect mahinga kai and prevent over-fishing.

Refer to Appendix 3 for a summary overview of the main Waimakariri River Catchment aquatic values

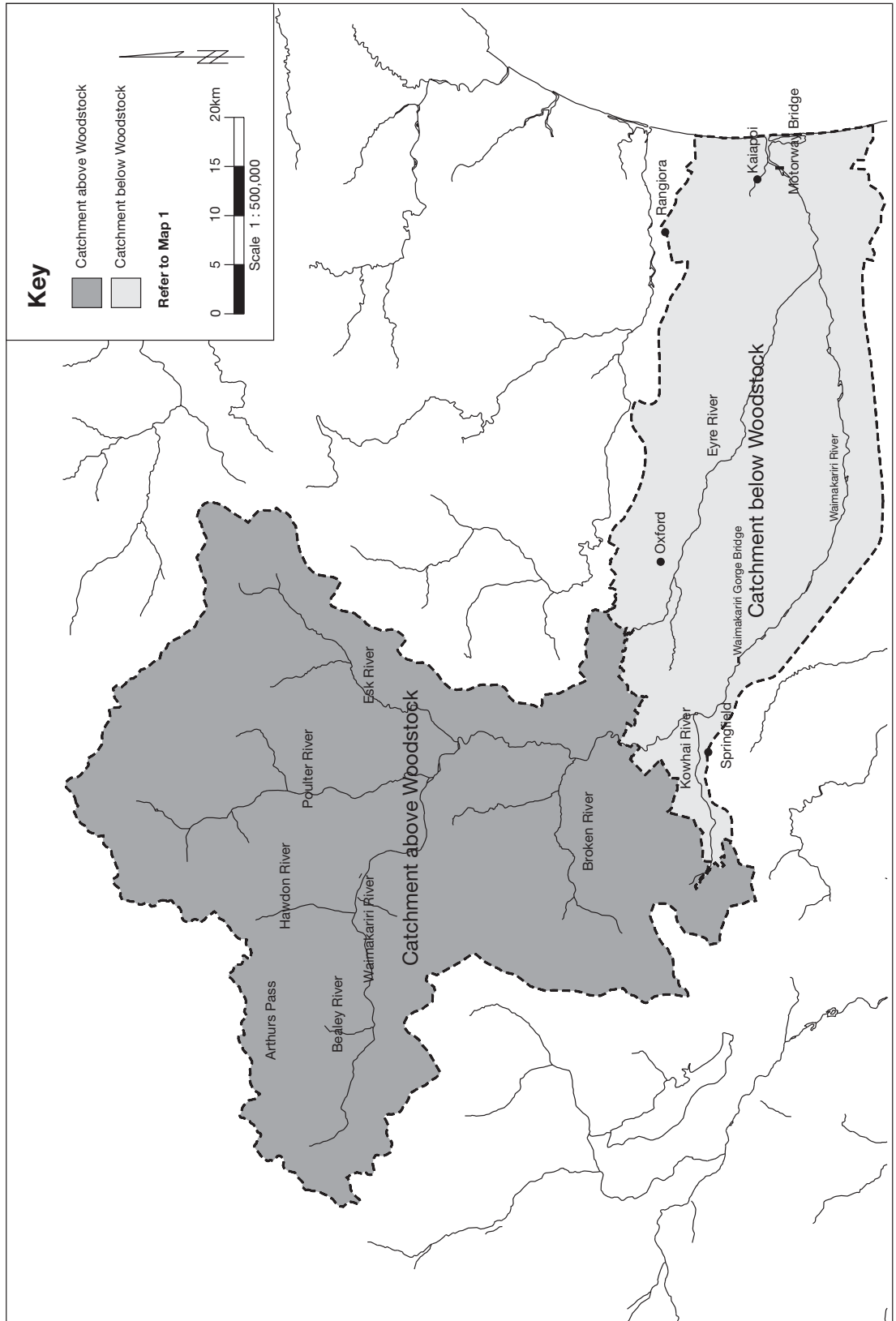


Figure 4 Waimakariri River Catchment above and below Woodstock

Part 2 Issue Resolution

4 Summary of Resource Management Issues

This plan contains objectives, policies and methods for resolving the following resource management issues:

Water Quantity (Chapter 5)

Issue 5.1

There are competing demands for the use of water in the Waimakariri River and its tributaries, lakes and wetlands, and hydraulically connected groundwater from: abstractors; instream users including those who store water; those who divert water; fishers and other recreational users; those who value the water for its natural character and its life-supporting capacity; and Tangata Whenua who value the water for its wahi tapu, wahi taonga and mahinga kai.

Issue 5.2

The use of water from the Waimakariri River to augment flows in the Cust River to safeguard its life-supporting capacity.

Water Quality (Chapter 6)

Issue 6.1

Point source and non-point source discharges of contaminants into surface water bodies in the Waimakariri River Catchment which adversely affect their ecological value or their present and future use by, and value to, the Canterbury community including Tangata Whenua.

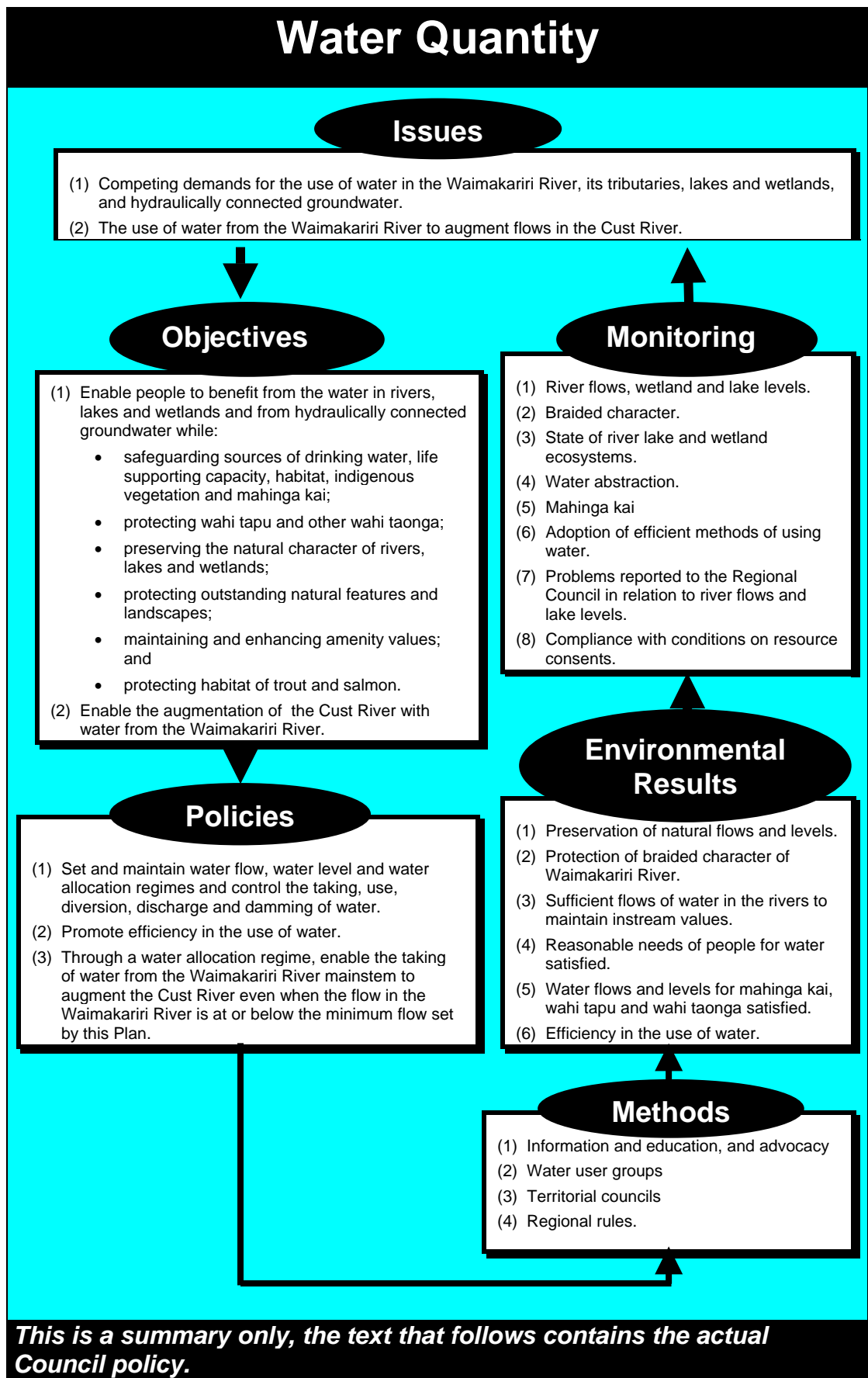
River and Lake Beds (Chapter 7)

Issue 7.1

Land uses or activities within the beds of rivers and lakes in the Waimakariri River Catchment which:

- (a) damage the natural character of rivers, lakes and wetlands;
- (b) damage areas of significant indigenous vegetation and significant habitats of indigenous fauna, and the habitat of trout and salmon;
- (c) damage the intrinsic values of ecosystems;
- (d) damage wahi tapu and other wahi taonga, or heritage sites ;
- (e) reduce amenity values, or damage outstanding natural features and landscapes;
- (f) reduce the flood-carrying capacity of rivers;
- (g) damage the banks of rivers;
- (h) have adverse effects on the stability or performance of essential structures within riverbeds.

Particular land uses and activities of concern include: building of structures, alterations to river banks, river diversions, dumping of waste materials and gravel, vegetation or tree plantings, inadequate weed control, gravel abstraction in sensitive areas, and recreational vehicle use.



5 Water Quantity

5.1 Introduction

This chapter addresses matters related to the protection, taking, using, diverting, discharging, or damming of water in the surface water bodies in the Waimakariri River Catchment, augmentation of other surface water bodies, and the taking of hydraulically connected groundwater where the take has a significant effect on surface flows.

Surface Water and Groundwater

In the catchment above Woodstock (Figure 4 and Map 1), the water bodies are near to their natural state. The rivers and lakes are an integral part of this natural landscape and are almost all unaffected by the taking, using, diverting, discharging, or damming of water.

Below Woodstock, the character of the Waimakariri River has been altered by flood protection works and weeds which have invaded the bed of the river. However, only minor changes have been made to the river's flow regime through takes and diversions and there are no dams on the river.

Below Halkett, the river is a major source of groundwater recharge to the south side of the river. Groundwater sustains flows in the springfed Avon and Heathcote Rivers. Groundwater is the source of all Christchurch's public water supply. The river also recharges groundwater to the north of the river.

The plains tributaries (Figure 3) have been highly modified and retain little of their natural character. They are used as drainage outfalls for the adjacent farmland which was swamp prior to its development for farming. The plains tributaries have all been affected by the general lowering of groundwater levels as a result of drainage and abstractions from groundwater. Some of the plains tributaries are extensively used as sources of water for irrigation.

The present and potential demand for water for irrigation to the north and south of the river is high. Also, the river has considerable potential for hydro-electric power generation and as a source of public water supply for Christchurch City. Competition for water, for example between use of the river for recreation or waste disposal and out of stream uses (irrigation and stockwater), currently occurs in the post-Christmas period when flows can reach as low as about 21 cubic metres per second (recorded at the Old Highway Bridge on one day in April 1971, the lowest recorded flow in the 27 years of record 1967-94)¹².

Water takes, diversions, uses, discharges, and damming need to be managed to enable people to appropriately use the resource while protecting the life-supporting capacity of ecosystems and other instream values.

Augmentation

Rivers, which in time might benefit from augmentation from the Waimakariri River, include: the Styx, Otukaikino, Avon, Heathcote and Selwyn on the south side of the river; and the Kaiapoi-Cam-Cust system, Ashley and streams dependent on recharge from the Ashley on the north side of the Waimakariri River. In the Styx, Avon, Heathcote and Otukaikino systems, low river flows may be increased indirectly by artificially recharging groundwater. This could also apply to the Kaiapoi and Ohoka river systems but not to the Selwyn, Cust or Ashley Rivers which would require augmentation directly from the Waimakariri River, or indirectly from stored water sources. At present, shortfalls of water to meet all the instream and out-of-stream demands are only a significant problem in the Cust and Ashley Rivers, and the only practical source of water to augment these rivers is the Waimakariri River. The

¹² This flow was recorded after abstractions of about 4 cubic metres per second for community scheme takes occurring upstream of the flow recording site at the Old Highway Bridge.

Selwyn River could be augmented from either the Rakaia River or the Waimakariri River. The main reason for augmenting the Cust River would be to maintain or improve its life-supporting capacity. Augmentation of this and other rivers could also maintain or improve the water availability for out-of-stream uses, provided appropriate environmental safeguards are also met.

5.2 Issue Resolution

Issue 5.1

There are competing demands for the use of water in the Waimakariri River and its tributaries, lakes and wetlands, and hydraulically connected groundwater from: abstractors; instream users including those who store water; those who divert water; fishers and other recreational users; those who value the water for its natural character and its life-supporting capacity; and Tangata Whenua who value the water for its wahi tapu, wahi taonga and mahinga kai.

Objective 5.1

Enable present and future generations to gain cultural, social, recreational, economic, health and other benefits from the rivers, lakes and wetlands in the Waimakariri River Catchment, and from hydraulically connected groundwater while:

- (a) safeguarding their existing value for efficiently providing sources of drinking water for people and their animals;
- (b) safeguarding the life-supporting capacity of the water, including its associated: aquatic ecosystems, significant habitats of indigenous fauna, and areas of significant indigenous vegetation;
- (c) safeguarding their existing value for providing mahinga kai for Tangata Whenua;
- (d) protecting wahi tapu and other wahi taonga of value to Tangata Whenua;
- (e) preserving the natural character of rivers, lakes and wetlands and protecting them from inappropriate use and development;
- (f) protecting outstanding natural features, and landscapes from inappropriate use and development;
- (g) maintaining and enhancing amenity values; and
- (h) protecting the significant habitat of trout and salmon.

Principal Reason

This objective recognises that people obtain cultural, social, recreational, economic, health and other benefits from rivers, lakes and hydraulically connected groundwater in the Waimakariri River Catchment and that the pursuit of these benefits should not have a significant adverse effect on those values identified in (a) to (h) of Objective 5.1

Hydraulically connected groundwater also needs to be managed because its use has implications for sustaining low river flows.

Policy 5.1

Set and maintain water flow, water level and water allocation regimes and control the taking, use, diversion, discharge and damming of surface water, and the taking of water from hydraulically connected groundwater, while achieving (a) to (h) of Objective 5.1, so that:

- (a) above Woodstock (Figure 4 and Map 1):**
 - (i) the range or rate of change of levels or flows of water in or entering lakes Blackwater, Grace, Grasmere, Hawdon, Letitia, Marymere, Mavis, Minchin, Pearson, Rubicon, Sarah, and Vagabonds Inn are preserved in their natural state;**
 - (ii) the natural flows, including flow patterns and variability, in the Waimakariri River and tributaries are protected;**
 - (iii) the natural water levels in wetlands are protected;**
- (b) below Woodstock (Figure 4 and Map 1):**
 - (i) the braided character of the Waimakariri River, aquatic ecosystems and habitats, wetlands, amenity based on the river, and groundwater recharge from the river, are protected;**
 - (ii) the aquatic ecosystems and habitats, wetlands and amenity based on the Kaiapoi-Cam-Cust, Otukaikino Creek, Styx, Kowai and upper Eyre River systems, are protected.**

Explanation

“Above Woodstock” and “Below Woodstock” means within those parts of the catchment defined in Figure 4 and Map 1. The upper Eyre means those parts or tributaries of the Eyre River which have a continual flow of water, e.g., Coopers Creek.

The rivers, lakes and wetlands in the catchment above Woodstock are integral parts of the high natural values that exist there. Existing values associated with rivers and wetlands can be destroyed or devalued by taking, using, diverting, discharging and damming of water. Alterations in water levels which maintain higher or lower lake levels for periods in excess of those that occur naturally, adversely affect the margins of lakes, e.g., wetlands, lake edge vegetation, or the landscape of the lake environs.

Below Woodstock the braided character of the Waimakariri River and the recreational, fisheries and ecological values are outstanding features of the river. Taking, using, damming, diverting and discharging water has the potential to adversely affect the natural character and the instream values of the river. Below Halkett the river recharges groundwater to the north and to the south of the river. Groundwater is the source of Christchurch’s water. Taking, damming and diversion have the potential to adversely affect this recharge.

The fishery and birdlife habitat associated with the plains tributaries would be adversely affected by excessive abstraction from these rivers.

Taking water from the groundwater near rivers where the groundwater has a hydraulic connection to the river, under certain conditions, has a similar effect on low flows as a direct take from the river.

Setting minimum flows will protect instream values of rivers. Setting water levels or controls on altering inflows and outflows to lakes will help protect the natural state of lakes.

Principal reason

To maintain minimum river flows to protect instream and other values and to efficiently and equitably allow abstractors to use water within these catchments.

Methods

1. The methods used or to be used by Environment Canterbury are:
 - (a) information, education and advocacy
 - (b) water user groups
 - (c) regional rules
 - (d) investigations
2. The Christchurch City Council, Waimakariri District Council, and Selwyn District Council in exercising their functions should consider the matters in Section 5.3.4.

Policy 5.2

Promote efficiency in the use of water.

Explanation

Efficiency involves both technical efficiency (avoidance of waste) and allocative efficiency (using water where it has greatest value). The reasonable and efficient use of water are matters required to be considered as part of the resource consent application process.

Principal Reason

Efficient use of water enables greater use to be made of water which is allocated out of stream. In turn this means that there will be less need to allocate more water from streams, or to decrease minimum flows, to meet future demands for water.

Methods

The methods used or to be used by Environment Canterbury are:

- (a) information, education and advocacy
- (b) water user groups
- (c) regional rules

Issue 5.2

The use of water from the Waimakariri River to augment flows in the Cust River to safeguard its life-supporting capacity.

Objective 5.2

Enable the augmentation of the Cust River with water from the Waimakariri River, subject to achieving (a) to (h) of Objective 5.1.

Principal reason

To enhance the instream values of the Cust River at times of low flow when its life-supporting capacity is diminished.

Policy 5.3

Set and maintain a water allocation regime, which enables the taking of water from the Waimakariri River mainstem, to augment the Cust River at times of low flow to protect and enhance its instream values even when the flow in the Waimakariri River is at or below the minimum flow set by this Plan.

Explanation

If the Waimakariri River is to be used to augment low flow in the Cust River and make a significant improvement in the naturally occurring low flows in the Cust River and Cust Main Drain, then it will be necessary to give this use a higher priority than other uses of the river and to provide for water to be diverted from the Waimakariri River even when the Waimakariri River is below its minimum flow. There will be a small effect on existing and future users of the Waimakariri River waters. It will mean that the flow above which abstractions from the river are authorised will be higher and low flows lower than they can be now.

When the Waimakariri River is below its minimum flow it will only be used to augment the Cust flows to protect instream values. The maximum amount of water that is needed from the Waimakariri River to augment the Cust river is 230 litres per second. It is only on rare occasions when this will coincide with a Waimakariri River which is below its minimum flow. In the worse case scenario, based on existing flow records (1 day in 11082 days), this would have reduced the flow at the old highway bridge from 22 cubic metres per second, the lowest recorded flow, to 21.77 cubic metres per second. The flow of the Cust River would have been increased from a few litres per second to 230 litres per second, sufficient to keep the river flowing and maintain the aquatic ecosystems that otherwise would suffer extreme stress. The Cust River is an important fish rearing habitat. Any discharge of Waimakariri River water into the Cust system, amongst other matters will have to meet the requirement of Section 107 of the RMA that there be no "*conspicuous change in the colour or visual clarity*" outside a mixing zone.

There is no reason to believe that salmon passage in the Waimakariri River would be impeded by a reduction in the flow in the main stem of 230 litres per second.

Abstraction of water from the Waimakariri River for augmentation of a water body to enable abstraction from that water body or from groundwater, or to enhance instream values of a water body other than the Cust River, is still feasible, but is subject to meeting the minimum flows set by this Plan. These abstractions for other augmentation purposes are considered under Policy 5.1 above.

Principal reason

To protect and enhance the life-supporting capacity and instream values of the Cust River.

Method

The method used or to be used by Environment Canterbury is:

- (a) regional rules

5.3 Methods

5.3.1 Information, Education and Advocacy

Environment Canterbury will continue to provide or disseminate information about the Waimakariri River Catchment water resources, land use options which take full advantage of

natural rainfall, the relative efficiencies of different irrigation systems and water management strategies which increase efficiencies.

Principal reason

Community awareness and understanding are needed in addition to regulation, to assist Environment Canterbury to manage water allocation and protect instream values.

5.3.2 Water User Groups

Environment Canterbury encourage the formation of water user groups to improve the efficiency of water allocation during periods of water shortages. Water user groups are groups of abstractors who, with the agreement of Environment Canterbury, have formed to share or roster available water at times of shortage. Support will be given by Environment Canterbury to the involvement of water user groups in achieving restrictions on abstractions and to draw up rosters. Environment Canterbury will liaise with water user groups when restrictions are necessary and when considering policy changes.

Principal reason

Water user groups can play a valuable role in minimising the effect of restrictions on abstractors and in helping to ensure the established river management regimes are adhered to.

5.3.3 Investigations

Environment Canterbury will carry out investigations within five years of this plan becoming operative to reassess the minimum flow requirements in the plains tributaries. If the results of these investigations conclude that any of the monitoring sites and/or minimum flows need to be altered to better achieve Objective 5.1, a plan change will be promoted.

5.3.4 Christchurch City Council, Waimakariri District Council, and Selwyn District Council

Through the exercise of their functions, including the preparation, variation, change or review of district plans, or processing of resource consent applications, the Christchurch City Council, Waimakariri District Council, and Selwyn District Council should consider the effects of any activity or use of land on water flow, water level and water allocation regimes. Examples include: proposals to establish land use activities requiring large quantities of water in water-short areas; and activities which affect natural flows above Woodstock.

Principal reason

Christchurch City Council, Waimakariri District Council, and Selwyn District Council, in carrying out their functions under the RM Act, have the potential to affect the demands for water from surface water and groundwater.

5.3.5 Regional Rules

The following rules control the taking, using, diverting, damming and discharge of water in the Waimakariri River and its tributaries and the taking of water from hydraulically connected groundwater where it has a significant effect on surface water flows.

Principal Reason

Rules are the most effective option for protecting instream and other natural values while providing for uses, takes, dams, discharges and diversions.

Abstraction of water

Abstraction of water in the Waimakariri River Catchment is classified in five different ways:

- (a) Abstraction of surface water or groundwater that is a Permitted Activity authorised by the Transitional Regional Plan. (See Appendix 4, such abstractions are not controlled by the rules in this plan.)
- (b) Abstraction of groundwater that is not hydraulically connected to any surface water body. This requires a resource consent, (Section 14 RMAct), unless it is an abstraction classified as a Permitted Activity under (a) above, but such abstractions are not subject to the rules in this Plan.
- (c) Abstraction of groundwater that is hydraulically connected to a surface water body, where it has a calculated stream depletion effect of 5 litres per second or less after a 30 day pumping period. This requires a resource consent, (Section 14 RMAct), unless it is an abstraction classified as a Permitted Activity under (a) above, but is not subject to the rules in this Plan.
- (d) Abstraction of groundwater that is hydraulically connected to a surface water body, where it has a calculated stream depletion effect greater than 5 litres per second after a 30 day pumping period. This requires a resource consent in accordance with Rule 5.1 unless it is an abstraction classified as a Permitted Activity under (a) above.
- (e) Abstraction of surface water. This requires a resource consent in accordance with Rule 5.1 unless it is an abstraction classified as a Permitted Activity under (a) above.

Abstractions allowed as permitted activities by the Transitional Regional Plan

The relevant abstractions allowed as Permitted Activities that are specified by the Transitional Regional Plan are detailed in Appendix 4 of this Plan. In particular, the Transitional Regional Plan provides for abstractions of small quantities of water from surface and groundwater, abstractions for aquifer or bore testing, and abstractions for the de-watering of construction sites. These activities are not controlled by the rules in this plan.

Rule 5.1 Discretionary Activity for which Environment Canterbury has restricted its discretion

Within the area of the Waimakariri River Catchment “below Woodstock” defined in Figure 4 and Map 1, the taking of water from:

- (i) any surface waters of the Waimakariri River or its tributaries; or**
- (ii) hydraulically connected groundwater¹³;**

is a discretionary activity for which Environment Canterbury has restricted its discretion.

This rule does not apply to:

- (a) the taking of water specified as a permitted activity in the Transitional Regional Plan; or**
- (b) abstractions from hydraulically connected groundwater where it can be established, using the "Jenkins" method or other scientifically accepted hydrological calculations that the surface water depletion resulting from a 30 day pumping period will not exceed 5 litres per second.**

Standards and Terms

The activity shall comply with the following standards and terms:

- (a) Fish shall be prevented from entering the water intakes.
- (b) The taking of water, other than that exempted from the cessation and restriction provisions in paragraph (f) below, shall cease for periods of up to 48 hours upon notice by Environment Canterbury, to allow measurement of the natural water flow, or groundwater levels.
- (c) On the written request of Environment Canterbury, the rate of take shall be measured to within an accuracy of 10% and a log kept of the hours of take and the rate of take. A copy of the records shall be provided to Environment Canterbury on request by Environment Canterbury.
- (d) For "A" Permits, the taking of water, downstream of Woodstock, from the Waimakariri River or its tributaries, or from hydraulically connected groundwater shall:
 - (1) cease whenever the "unmodified flow" is at or below the "Minimum Flow" for "A" permits specified in Table 2; and
 - (2) whenever the "unmodified flow" is above the "Minimum Flow" for "A" permits and at or below the "Minimum Flow" for "B" permits that are specified in Table 2, be reduced to no more than the proportion of the maximum allowable rate of take determined by the following formula:
 The "unmodified flow" minus the "Minimum Flow" for "A" permits, divided by the "Allocation Limit".
- (e) For "B" Permits, the taking of water, downstream of Woodstock, from the Waimakariri River or its tributaries, or from hydraulically connected groundwater shall cease whenever the "unmodified flow" is at or below the "Minimum Flow" for "B" permits specified in Table 2.

¹³ Hydraulically connected groundwater is groundwater that is laterally connected to a river, with a stream depletion factor less than 100 days calculated using the method published by Jenkins, C T (1977) *Computation of rate and volume of stream depletion by wells*, in *Techniques of Water Resources Investigation of the United States Geological Survey*, Chapter D1, Book 4, 3rd Printing. (Note that the taking of groundwater which is not defined as hydraulically connected, and therefore is not affected by the rule, may still need to be authorised by another regional plan or by a resource consent.)

- (f) The cessation and restriction provisions in paragraphs (d) and (e) shall not apply to the taking of water for:
- (i) an individual's needs for the purpose of providing drinking and cooking water and for hygiene purposes, of up to 250 litres per person per day; or for the reasonable needs of an individual's animals for drinking water;
 - (ii) a municipal or rural reticulated water supply for the purpose of providing drinking and cooking water and for hygiene purposes, of up to 250 litres per day for every person served by that water supply. For a surface take from the mainstem of the Waimakariri River or where a groundwater take is restricted by virtue of its hydraulic linkage to the mainstem of the Waimakariri River, 350 litres per person per day shall be exempted from restriction rather than 250 litres per person per day. Where a take from a water resource is restricted, but is only one in a number of separate takes servicing a network, then the daily volume of that take which is exempted from restriction, shall be calculated according to the following formula: $P \times E \times T / TT$ (where P is the population served by the network, E is the per person per day exemption from restriction, T is the maximum daily volume authorised for that take and TT is the sum of the maximum daily volumes authorised for all of the takes servicing the network);
 - (iii) Darfield's and Springfield's municipal reticulated water supplies, of up to 27% of the maximum daily volume of take authorised by resource consents held by Selwyn District Council.
 - (iv) a reticulated water supply for the purpose of providing drinking water for animals; and
 - (v) augmentation of the Cust River from the mainstem of the Waimakariri River and discharged upstream of Bennetts Road, by up to 230 litres per second, at any time the flow in the Cust Main Drain at Threlkelds Road is at or below 230 litres per second.
- (g) For "A" permits, in the case of abstractions from hydraulically connected groundwater, the cessation and restriction provisions in paragraph (d) above, apply only above the specified rate of take that would have a calculated effect on the surface water depletion rate, resulting from a 30 day pumping period, that is greater than 5 litres per second.
- (h) For "A" permits, the restrictions in paragraph (d) above, may be achieved by reallocating available water within a "Water Users Group", that limits the combined abstractions from water permit holders in accordance with the restrictions. Where Environment Canterbury has determined there to be a water sharing regime for all water permit holders in a defined catchment or part catchment, then the taking of water in accordance with that determination shall be deemed to be in compliance with paragraph (d) above. Whenever agreement amongst all the permit holders in a catchment or part catchment to operate within a water user group cannot be achieved, then the restrictions on individual takes shall be in accordance with paragraph (d) above.

Environment Canterbury will encourage the formation of a "Water Users Group" to implement the water sharing regime.

Interpretation of the Standards and Terms (including Table 2)

Minimum Flow is the flow in the river, below which the taking of water from those water bodies defined by "Water Resource" shall cease.

Site is the location on the river of the gauging site maintained by Environment Canterbury at which the "Minimum Flow" is assessed (see also Figure 5 which indicates the location of the Sites).

“A” Permits are water permits which are granted to take water until the sum of the individual takes from the “Water Resource” equals the “Allocation Limit”. No “A” permits are to be granted above this limit. An “A” permit remains an “A” permit on the transfer in whole or part of the permit, provided the same “Allocation Limit” applies to the permit. New permits that are granted as replacements for an “A” permit on its expiry or review, remain as “A” permits, where the sum of the rates of take and the allocated volumes of the new permit or permits are not more than that of the original “A” permit, and provided the same “Allocation Limit” applies to the permits.

Allocation Limit is the total flow rate of water to be allocated via “A” permits. In the case of abstractions from hydraulically connected groundwater, the “Allocation Limit” applies only to the calculated stream depletion flow rate, not to the whole rate of groundwater abstracted from the bore or well.

“B” Permits are water permits which are granted to take water once the “Allocation Limit” for “A” permits has been reached.

“Unmodified flow” is the rate of flow in the river calculated by Environment Canterbury as if there was no taking occurring. In the case of the Cust River, the “unmodified flow” shall be calculated to exclude any water augmenting the river that is exempted in accordance with paragraph (f) (v) of the Standards and Terms.

Water Users Group is as defined in Method 5.3.2

Water Resource is defined as follows (see also Figure 5):

Waimakariri River is the mainstem of the Waimakariri River “below Woodstock”, the Kowai River and its tributaries and groundwater which is hydraulically connected to these surface waters, but excluding the Eyre River and its tributaries and groundwater which is hydraulically connected to these, and Saltwater Creek and its tributaries.

(Note: The Eyre River and Saltwater Creek are excluded because the taking of water from these rivers has no effect on flows in the mainstem of the Waimakariri River.)

Styx River is the mainstem of the Styx River, its tributaries (but excluding Kaputone Creek), and groundwater which is hydraulically connected to these surface waters.

Kaputone Creek is the mainstem of the Kaputone Creek, its tributaries, and groundwater which is hydraulically connected to these surface waters.

Otukaikino Creek is the mainstem of the Otukaikino Creek, its tributaries, and groundwater which is hydraulically connected to these surface waters.

Courtenay Stream is the mainstem of the Courtenay Stream, its tributaries (but excluding Greigs Drain), and groundwater which is hydraulically connected to these surface waters.

Greigs Drain is the mainstem of Greigs Drain, its tributaries, and groundwater which is hydraulically connected to these surface waters. The most downstream point of the mainstem of Greigs Drain is defined to be at its Minimum Flow Site. Downstream of this Site the surface waters are the Courtenay Stream.

Kaiapoi River is the mainstem of the Kaiapoi River, its tributaries (but excluding the Cam River, Courtenay Stream, Cust Main Drain and Ohoka Stream), and groundwater which is hydraulically connected to these surface waters.

Cust Main Drain is the mainstem of the Cust River downstream of the Cust River Minimum Flow Site until its confluence with the Kaiapoi River, its tributaries (but excluding No. 7 Drain), and groundwater which is hydraulically connected to these surface waters.

Cust River is the mainstem of the Cust River upstream of its Minimum Flow Site, its tributaries, and groundwater which is hydraulically connected to these surface waters.

No. 7 Drain is the mainstem of the No. 7 Drain, its tributaries, and groundwater which is hydraulically connected to these surface waters.

Ohoka Stream is the mainstem of the Ohoka Stream, its tributaries, and groundwater which is hydraulically connected to these surface waters.

Cam River is the mainstem of the Cam River, its tributaries (but excluding North Brook, Middle Brook and South Brook upstream of their Minimum Flow Sites), and groundwater which is hydraulically connected to these surface waters.

North Brook is the mainstem of North Brook upstream of its Minimum Flow Site, its tributaries, and groundwater which is hydraulically connected to these surface waters.

Middle Brook is the mainstem of Middle Brook upstream of its Minimum Flow Site, its tributaries, and groundwater which is hydraulically connected to these surface waters.

South Brook is the mainstem of South Brook upstream of its Minimum Flow Site, its tributaries, and groundwater which is hydraulically connected to these surface waters.

Matters restricting exercise of discretion

Environment Canterbury will restrict the exercise of its discretion when deciding to grant or refuse a resource consent, and in imposing any conditions, to the following matters:

- (a) The reasonable need for the quantities of water sought, and the ability of the applicant to abstract and apply those quantities.
- (b) The availability and practicality of using alternative supplies of water including alternative public or community reticulated supplies.
- (c) In the case of takes from hydraulically connected groundwater:
 - (i) the effects the take has on surface water flows including the cumulative effects of the combined take from a person's bore field;
 - (ii) the effects the take has on neighbouring bores; and
 - (iii) the effects the take has on other authorised takes.
- (d) For surface takes:
 - (i) the effects the take has on river flows, and consequential effects on those values identified in (a) to (h) of Objective 5.1, near the point of take;
 - (ii) the effects the take has on other authorised takes.
- (e) The collection, recording, monitoring and provision of information concerning the exercising of the consent in accordance with Section 108(4) of the RM Act.

Notification

In accordance with Section 94D(2) of the Act, an application for a resource consent required by this rule does not need to be notified, and in accordance with Section 94D(3) of the RM Act, notice of such an application does not need to be served.

In deciding whether or not to notify an application for a resource consent required by this rule, the Council will take into account all relevant considerations, including (but not restricted to):

- (1) the volume of the proposed take relative to the minimum flow;

- (2) the ecological sensitivity and/or values of the water body concerned;
- (3) the number, volume, and effects on reliability of supply of existing permits; and
- (4) possible cumulative effects.

Effect of Rule 5.1 on Existing Resource Consents

This rule shall affect, under section 130 of the RM Act, the exercise of existing resource consents below Woodstock for the taking of water from surface waters of the Waimakariri River or its tributaries or from hydraulically connected groundwater

When this rule becomes operative, Environment Canterbury may serve notice, under Section 128 of the RM Act, on the holders of all such resource consents of its intention to review the conditions of their resource consent, where in Environment Canterbury's opinion, it is appropriate to do so in order to enable the standards and terms set by the rule to be met.

The holders of resource consents shall comply with the standards and terms of this rule from the date at which the new conditions on their resource consent commence under Section 116 of the RM Act.

For a municipal or rural reticulated water supply scheme, that cannot immediately meet standard and term (f)(ii), the imposition of restrictions may be staged in accordance with a plan provided to Environment Canterbury by the scheme providers to upgrade the scheme, so that it complies within 10 years of this Plan becoming operative.

TABLE 2 MINIMUM FLOWS FOR “A” AND “B” WATER PERMITS WITHIN THE WAIMAKARIRI RIVER CATCHMENT, AND ALLOCATION LIMITS FOR “A” PERMITS.

Water Resource	Minimum flow in litres per second for “A” Permits	Allocation limit in litres per second for “A” Permits	Minimum flow in litres per second for “B” Permits	Site where minimum flow assessed (see Figure 5)	Map reference of site
Waimakariri River (including the Kowai River) “below Woodstock”	41000	22000	63000	Old Highway Bridge	M35:818-547
Styx River	1200	800	2000	Radcliffe Road	M35:817-491
Kaputone Creek	150	180	330	Confluence with Styx River	M35:824-495
Otukaikino Creek	2000	1000	3000	Dickeys Road	M35:804-524
Courtenay Stream	260	140	400	Main North Road	M35:813-560
Greigs Drain	150	70	220	Greigs Drain Road	M35:805-548
Kaiapoi River	600	1000	1600	Neeves Road	M35:796-568
Cust Main Drain	230	690	920	Threlkelds Road	M35:783-606
Cust River	20	290	310	Rangiora-Oxford Road	M35:661-660
No. 7 Drain	60	130	190	Main Drain Road Culvert	M35:781-608
Ohoka Stream	300	500	800	Confluence with Kaiapoi River	M35:803-591
Cam River	1000	700	1700	Youngs Road	M35:801-633
North Brook	530	200	730	Marsh Road	M35:795-649
Middle Brook	60	30	90	Marsh Road	M35:782-647
South Brook	140	100	240	Marsh Road	M35:779-647

Note: The total authorised peak allocation from each water resource at the date of preparing this Plan is shown in Table 1.

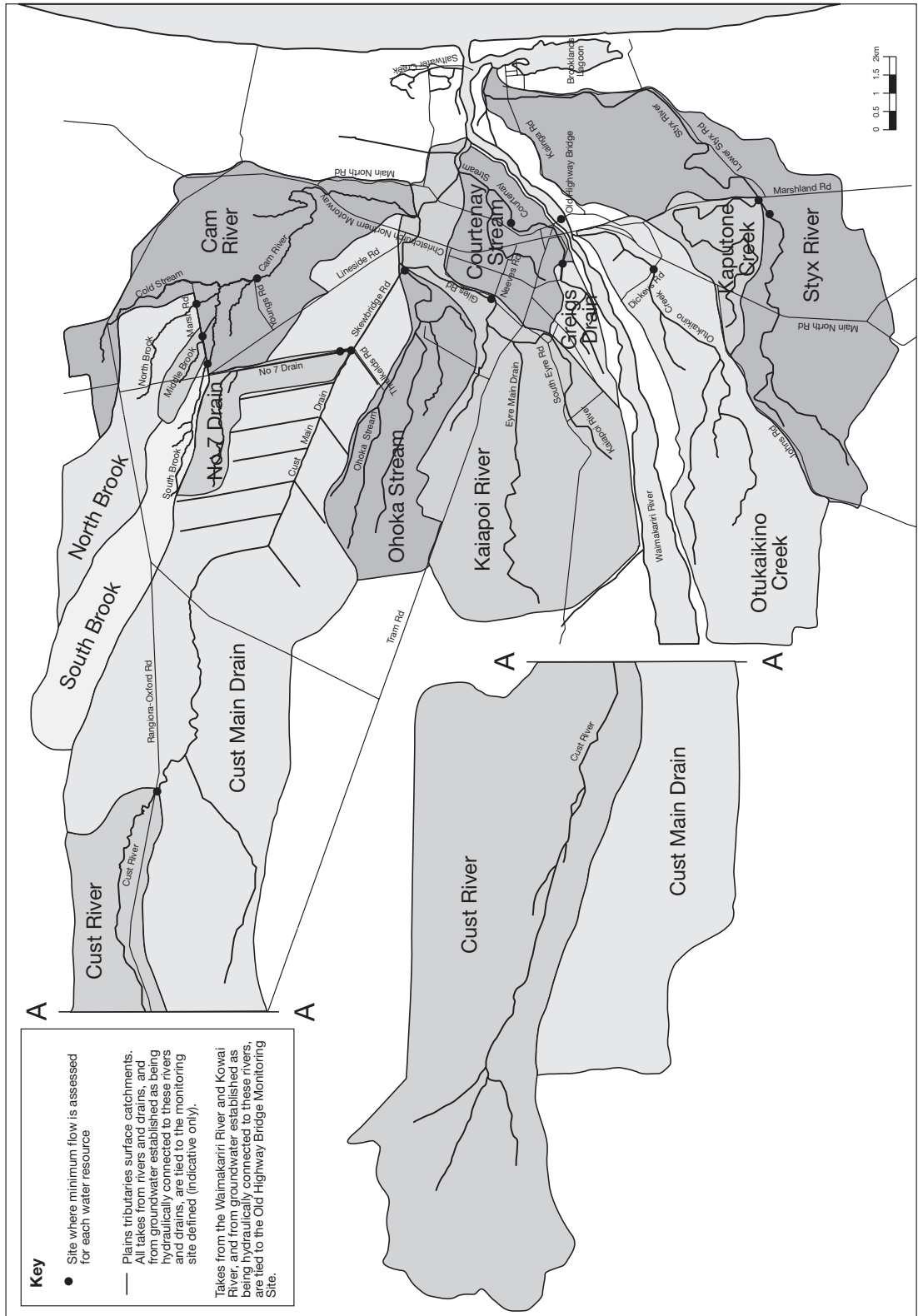


Figure 5 Waimakariri River and Plains Tributaries Monitoring Sites

Use, Diversions, Damming and Discharges of Water

Appendix 4 details the relevant Permitted Activities specified by the Transitional Regional Plan for the use, diversion, damming and discharges of water. In particular, the Transitional Regional Plan provides for the diversion and discharge of natural water associated with minor realignments or minor improvements to watercourses, and minor damming of rivers and streams. These activities are not controlled by the rules in this plan.

Rule 5.2 Discretionary Activity

Within the area of the Waimakariri River Catchment “below Woodstock” defined in Figure 4 and Map 1:

- (a) the “use”¹⁴ of any water in tributaries of the Waimakariri River;
- (b) the diversion of water from, or the discharge of water into the Waimakariri River or its tributaries or any wetland;
- (c) the damming of water in tributaries of the Waimakariri River.

is a discretionary activity.

This rule does not apply to damming, “uses”, discharges or diversions which are specified as permitted activities in the Transitional Regional Plan.

Effect of Rule 5.2 on Existing Resource Consents

This rule does not affect the exercise of existing resource consents for the “use”, diversion, discharge or damming of water.

Financial Contribution

A financial contribution, in the form of money, land, or any combination thereof, may be required as a condition of any resource consent granted under Rule 5.2.

The financial contribution shall be made for the purposes of:

- (a) restoring, to pre-activity conditions¹⁵ at the same location or in close proximity, any natural or physical resources which suffer damage or loss as a result of the activity; or
- (b) ensuring that there are positive effects on the environment, at the same or any other location within the Waimakariri River catchment, to offset any adverse effects of the activity on natural or physical resources.

The financial contribution shall be determined as follows:

- (a) Where the environment can be restored, the financial contribution shall be limited to:
 - (i) the costs of measures of restoration actually undertaken or to be undertaken; or
 - (ii) the costs of restoring the environment to a pre-activity state.

¹⁴ “Use” Means the utilisation of water in a water body for a purpose of exclusive value to the user which cannot be described as a take, a dam, a divert, or a discharge; including the use of the flow in a water body to operate a turbine, a waterwheel, sluicing equipment or other mechanical devices; but not including a use in relation to the surface of the water body, such as swimming, fishing or boating

¹⁵ Restoring to pre-activity conditions means restoring to a state similar to or better than that existing prior to carrying out the activity.

- (b) Where the environment can not be restored, the financial contribution shall be limited to an amount calculated by the consent authority as if the environment could be restored to a pre-activity state.
- (c) Where a financial contribution is received for damage to the environment that can not be restored, the contribution shall be used for the purpose of environmental enhancement or maintenance of rivers or streams and their margins and wetlands within the Waimakariri River catchment.

Rule 5.3 Non-complying Activities

Within the area of the Waimakariri River Catchment “above Woodstock” defined in Figure 4 and Map 1:

- (a) the taking of water from the Waimakariri River or its tributaries, including lakes, or from hydraulically connected groundwater;
- (b) the “use” of any water in tributaries, including lakes and wetlands, of the Waimakariri River;
- (c) the diversion of water from, or the discharge of water into, the Waimakariri River or its tributaries, including lakes and wetlands;

is a non-complying activity.

This rule does not apply to:

- (a) taking, “uses,” diversions or discharges which are specified as permitted activities in the Transitional Regional Plan; or
- (b) activities prohibited by Rule 5.4 in Chapter 5 of this Plan.

Effect of Rule 5.3 on Existing Resource Consents

This rule does not affect the exercise of existing resource consents for the taking “use”, diversion, or discharge of water.

Rule 5.4 Prohibited Activities

The following are prohibited activities, for which no resource consent shall be granted:

- (a) the “use” of water in the mainstem of the Waimakariri River from its source down to the Coastal Marine Area;
- (b) the damming of water in the mainstem of the Waimakariri River from its source down to the Coastal Marine Area;
- (c) the damming of water in any river, including tributaries, of the Waimakariri River Catchment “above Woodstock” defined in Figure 4 and Map 1;
- (d) the taking, “use”, damming, diverting or discharging of water which changes the natural range, or rate of change, of levels or flows of water entering or in the following lakes: Blackwater, Grace, Grasmere, Hawdon, Letitia, Marymere, Mavis, Minchin, Pearson, Rubicon, Sarah, and Vagabonds Inn.

This rule does not apply to taking, “uses”, diversions, dams or discharges:

- (a) that are specified as permitted activities in the Transitional Regional Plan; or
- (b) that were previously authorised by a resource consent which has expired, providing the character, intensity and scale of the activity is the same.

Effect of Rule 5.4 on Existing Resource Consents

This rule does not affect the exercise of existing resource consents for activities prohibited by the rule.

5.4 Environmental Results Anticipated

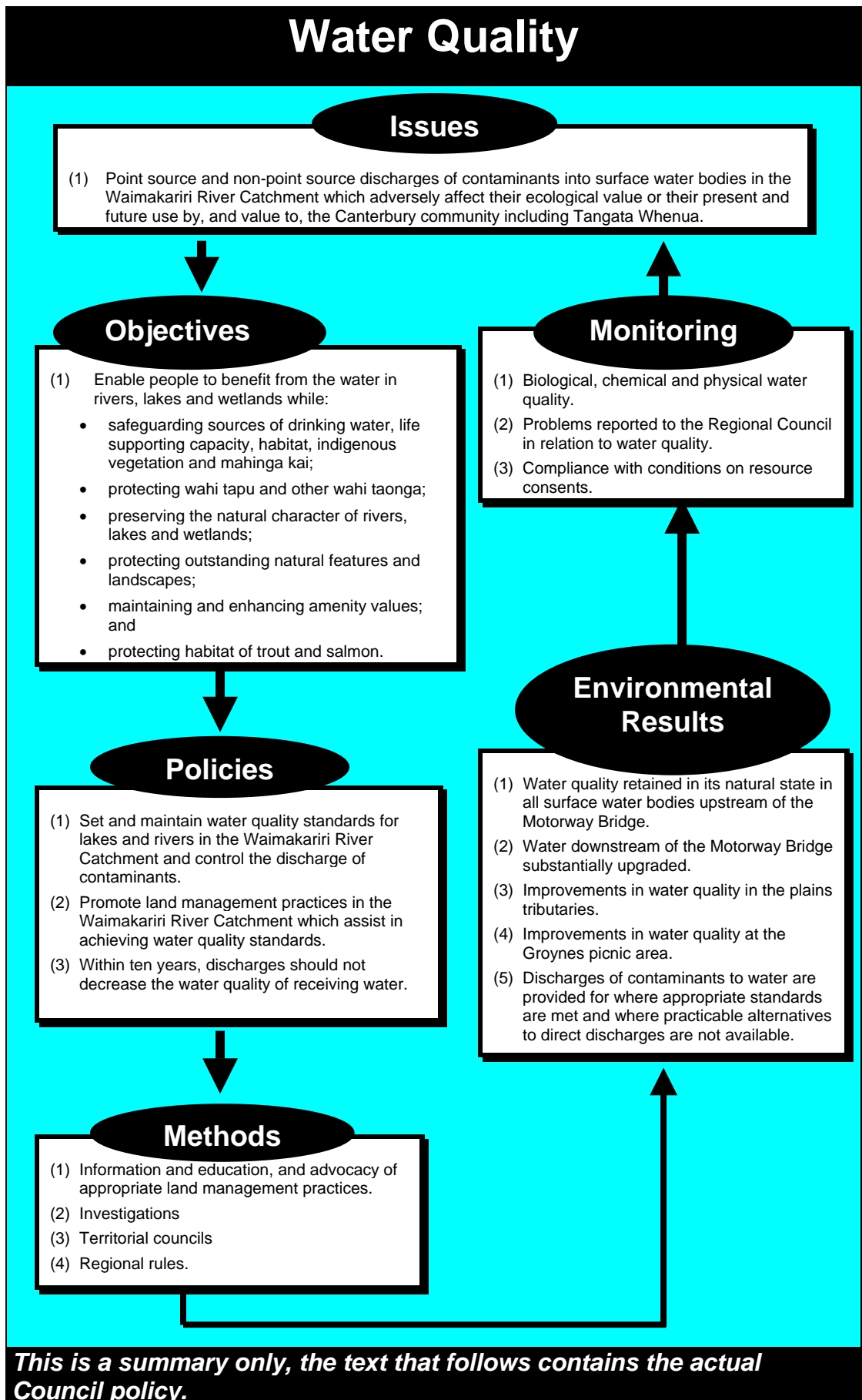
Implementation of the above water quantity policies and methods is expected to have all of the following environmental results:

- (1) Preservation of the natural flows and levels of rivers, lakes and wetlands in the catchment “above Woodstock”.
- (2) Protection of the braided character of the Waimakariri River, where it exists “below Woodstock”, and of groundwater recharge from the river.
- (3) Sufficient depth of water and sufficient flow to maintain the fisheries, wildlife, wetlands and recreation associated with rivers in the catchment.
- (4) The reasonable needs of people for water including domestic, stock, irrigation and industrial supply, and effluent disposal satisfied.
- (5) Lake level and river flow requirements for mahinga kai, wahi tapu and wahi taonga satisfied.
- (6) Efficiency in the use of water.

5.5 Monitoring

For water quantity the following environmental indicators will be monitored to assess the suitability and effectiveness of this part of the Plan, and any need for it to be reviewed. Chapter 9 sets out details of monitoring activities.

- (1) Lake and wetland water levels and river flows and levels.
- (2) Braided character of the river.
- (3) The state of aquatic ecosystems and associated wildlife.
- (4) Trends in the total abstraction of water relative to its reliability of supply.
- (5) Abundance and quality of mahinga kai.
- (6) Adoption of efficient methods of using water.
- (7) Environmental incidents reported to Environment Canterbury in relation to water quantity.
- (8) Compliance with conditions on resource consents.



6 Water Quality

6.1 Introduction

This chapter addresses surface water quality issues throughout the Waimakariri River Catchment.

Residents of Christchurch and surrounding areas, are fortunate to have a major river catchment nearby, which, with the exception of the reach downstream of the Otukaikino Creek confluence (Motorway Bridge) and some of the plains tributaries, has high water quality.

In the catchment above Woodstock (Figure 4) the water quality is generally very high. However, the increasing popularity of various recreational activities in the upper catchment areas and the associated waste produced, e.g., human sewage, oil leaks and spill from vehicles, represents a potential threat to water quality.

In the mainstem of the Waimakariri River below Woodstock down to its confluence with the Otukaikino Creek, and in the Otukaikino Creek, the water quality is also generally high. Abundant birdlife in parts of the river are a source of contaminants. Bird faeces can add significant quantities of faecal coliform indicator bacteria to the river. This makes water quality interpretations difficult, because the significance of these indicator bacteria for water contact recreation is not fully understood.

The Waimakariri River immediately below the Old Highway bridge is unsuitable for water contact recreation, primarily because it is the mixing zone for agriculturally-based industrial discharges. Water quality downstream of the mixing zone is sometimes not suitable for water contact recreation because of the combination of micro-biological contaminants from the industrial discharge and a range of other sources upstream of the industrial discharge. Nevertheless, it is used for a wide range of activities including contact recreation. It is popular because of its undeveloped state and its close proximity to Christchurch. The recreation experience may be adversely affected by poor water quality.

The plains tributaries are affected by point and non-point source discharges. The catchments of the plains tributaries are experiencing steady growth in urban areas and growth in settlement of rural areas. In addition, there is increasing intensity of land use in their catchments and, perhaps more importantly, adjacent to rivers and drains.

The plains tributaries are not generally used for swimming except for the Groynes picnic area. This area does not meet accepted water quality guidelines for contact recreation because of stock and wildlife sources of faecal coliforms.

Tangata Whenua consider discharges to surface water bodies should not be allowed. The discharge of sewage to water bodies is particularly offensive to Tangata Whenua. The Waimakariri River and the plains tributaries were once important sources of mahinga kai (fish and birds) for Tangata Whenua. Eel, which are widespread in the catchment, were the most important fish species. The plains tributaries were the most important sources of mahinga kai. However, as a result of past and present discharges, the plains tributaries and the lower Waimakariri River are considered by Tangata Whenua to have been devalued.

6.2 Issue Resolution

Issue 6.1

Point source and non-point source discharges of contaminants into surface water bodies in the Waimakariri River Catchment which adversely affect their ecological value or their present and future use by, and value to, the Canterbury community including Tangata Whenua.

Objective 6.1

Enable present and future generations to gain cultural, social, recreational, economic, health and other benefits from the rivers, lakes and wetlands in the Waimakariri River Catchment while:

- (a) safeguarding their existing value for efficiently providing sources of drinking water for people and their animals;
- (b) safeguarding the life-supporting capacity of the water, including its associated: aquatic ecosystems, significant habitats of indigenous fauna, and areas of significant indigenous vegetation;
- (c) safeguarding their existing value for providing mahinga kai for Tangata Whenua;
- (d) protecting wahi tapu and other wahi taonga of value to Tangata Whenua;
- (e) preserving the natural character of rivers, lakes and wetlands and protecting them from inappropriate use and development;
- (f) protecting outstanding natural features and landscapes from inappropriate use and development;
- (g) maintaining and enhancing amenity values; and
- (h) protecting the significant habitat of trout and salmon.

Principal reason

This objective recognises that people obtain cultural, social, recreational, economic, health and other benefits from rivers and lakes in the Waimakariri River Catchment and that the pursuit of these benefits should not be at the expense of those values identified in (a) to (h) of Objective 6.1.

Policy 6.1

Set and maintain water quality standards for, and control the discharge of contaminants into, surface water bodies in the Waimakariri River Catchment as outlined in Figure 6 and defined in Map 2 to:

- (a) protect the natural state of the water in lakes and rivers upstream of the confluence of the Waimakariri River with the Otukaikino Creek;
- (b) ensure water quality is suitable for drinking water for animals, contact recreation, fisheries, fish spawning, aquatic ecosystems and is not altered in those characteristics that have a direct bearing upon the aesthetic values of water or Tangata Whenua cultural values, in the mainstem of the Waimakariri River downstream of the confluence of the Waimakariri River with the Otukaikino Creek;
- (c) ensure water quality is suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems and is not altered in those characteristics that have a direct bearing upon the aesthetic values of water, in the Kaiapoi River, Styx River, Otukaikino Creek downstream of the Groynes picnic area, and their tributaries; and
- (d) ensure that, in the Otukaikino Creek and its tributaries at, and upstream of, the Groynes picnic area:
 - (i) water quality is suitable for drinking water for animals, fisheries, fish spawning, and aquatic ecosystems;
 - (ii) the natural water quality with respect to organisms of public health

significance is maintained; and

- (iii) water quality is suitable aesthetically and visually for contact, and other forms of, recreation.**

Explanation

The water quality of the Waimakariri River including all tributaries and lakes upstream of the confluence of the Waimakariri River with the Otukaikino Creek, should retain its natural characteristics, in keeping with the present very high natural values of these water bodies.

In the remainder of the Waimakariri River mainstem down as far as the Coastal Marine Area boundary (Figure 6), the quality of the surface waters should be upgraded so that it is suitable for drinking water for animals, contact recreation, fisheries, fish spawning, aquatic ecosystems and is not altered in those characteristics that have a direct bearing upon the aesthetic values of water or Tangata Whenua cultural values.

In the Otukaikino Creek, the Styx River, the Kaiapoi-Cam-Cust river system and most of the tributaries of these three river systems, a contact recreation and cultural standard of water quality is generally unobtainable because of non-point, and to a lesser extent point-source discharges. These water bodies should be maintained suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems and aesthetic purposes. In addition, in the Otukaikino Creek at and upstream of the Groyne picnic area, Environment Canterbury does not want to compromise the possible future attainment of water quality suitable for contact recreation.

Principal Reason

The setting of water quality standards provides a clear unambiguous statement of the environmental quality that will be achieved and the protection that such standards provide for water uses and values.

The standards will ensure the community's desires for maintenance and enhancement of water quality in the Waimakariri River are met, while at the same time recognising that there may be some processes causing a reduction in water quality that may not be readily controllable, e.g., the impact of wildfowl on microbiological water quality.

It is not presently appropriate to set microbiological water quality standards for contact recreation for the Groyne section of the Otukaikino Creek, because it is not yet clear whether such standards can practicably be achieved. However, while investigations are proceeding, no activities should occur that would prevent the future attainment of water quality suitable for contact recreation.

Methods

The methods used or to be used by Environment Canterbury are:

- (a) regional rules

Policy 6.2

Promote land management practices in:

- (a) the Waimakariri River Catchment which assist in achieving water quality standards; and
- (b) the catchment of the Groyne picnic area of the Otukaikino Creek which improve water quality at the picnic area to a level suitable for contact recreation.

Explanation

Topdressing and heavy stocking in the catchment of some lakes in the upper catchments may result in accelerated rates of nutrients entering these lakes and consequently accelerating the natural eutrophication rates of these waters. Micro-organisms are also likely to be present at higher concentrations than would occur naturally. The main sources of these appear to be farm animals and birds. The present relatively high water quality status of these water bodies will deteriorate unless measures are taken to reduce the possible impacts of certain land uses.

The plains tributaries drain an extensive area of intensively farmed land. Many streams are less than a metre wide. They all receive runoff via farmland and urban drainage systems. Most streams and the drains which flow into them are unfenced and stock generally have unrestricted access. The plains tributaries also support large populations of waterfowl. It may be impossible to meet a water contact standard for many of these water bodies. However, land management practices can be modified to minimise effects on water quality.

Water at the Groynes picnic area is used extensively for swimming. Recent sampling has shown water quality does not meet the contact recreation standard. This is believed to be due to agricultural and waterfowl and not to industrial, or human sources of contamination. The Groynes is a very important recreational area that has been used for swimming for many years. The frequent exceedance of the water quality guidelines for contact recreation is of significant community concern.

Investigations to date have included water quality sampling programmes and riparian surveys. As a result of these investigations it has been possible to eliminate industrial and human sources of contamination. The main sources of contamination appear to be livestock and wildlife. There are numerous small streams in the upper catchment to which stock have access. At the moment, the relative contributions of microbiological contaminants from wildlife and stock cannot be determined. Investigations are continuing to try and establish the sources of contamination and the feasibility of control measures.

Principal reason

To ensure that land uses in lake catchments do not lead to accelerated eutrophication of lakes, and to minimise the effects of land uses on water quality in the plains tributaries.

Methods

1. The methods used or to be used by Environment Canterbury are:
 - (a) information and education, and advocacy of appropriate land management practices
 - (b) investigations
2. The Christchurch City Council, Waimakariri District Council and Selwyn District Council in exercising their functions should consider the matters in Section 6.3.3.

Policy 6.3

Within ten years of this plan becoming operative, except for stormwater, no direct discharge of contaminants into the Waimakariri River or its tributaries should occur unless the discharge is of a standard that ensures the quality of the receiving water is not reduced outside of a reasonable mixing zone.

Explanation

In considering consents for the direct discharge of contaminants into the Waimakariri River or its tributaries Environment Canterbury will take into account the practicalities of a reticulated waste reception system accommodating such discharges within ten years. The

Christchurch City Council intends to expand the capacity of its Bromley treatment plant as well as extending the catchment for the plant.

For some contaminant discharges, such as stormwater, it would serve little purpose for them to be reticulated for treatment elsewhere if the river already carries the same or greater contaminant loads. For other potential discharges, their location, or the particular type or volume of contaminants involved, may mean that it is impractical for them to be handled through an upgraded Bromley treatment plant. Some other form of treatment system will be required.

Principal Reason

There is a community desire, and it is the policy of Environment Canterbury in its Regional Policy Statement to progressively improve water quality. This means going further than the water quality standards set in this plan. The use of an expanded Bromley treatment plant or other treatment systems is preferable to direct discharges.

Methods

1. The methods used or to be used by Environment Canterbury are:
 - (a) regional rules
2. The Christchurch City Council, Waimakariri District Council and Selwyn District Council in exercising their functions should consider the matters in Section 6.3.3.

6.3 Methods

6.3.1 Information and Education, and Advocacy of Appropriate Land Management Practices

Non-point sources of contaminants are a more difficult problem to deal with than point sources of contaminants. Non-point source pollution is cumulative and results from land management practices. Advocacy and provision of information is the most appropriate way to achieve improvements. Some organisations have published their own environmental codes of practice and Environment Canterbury supports these initiatives where they are consistent with this Plan's objectives.

Appropriate land use practices that enhance water quality include: wetland treatment of effluent and stormwater, the fencing and planting of riparian strips along waterways, and the exclusion of stock from natural waterways and riverbeds. Solutions to how land use practices for particular waterways should be managed must be done in consultation with the farming community, including Federated Farmers and local land care groups.

Principal reason

Knowledge about the effect of activities on the environment and how to avoid, remedy or mitigate adverse effects will in many situations achieve the desired outcomes and avoid the need to use regional rules.

6.3.2 Investigations

Environment Canterbury will undertake an investigation programme to:

- (a) determine the potential to improve water quality in the plains tributaries and report on the results of these investigations by June 2001;
- (b) determine if a contact recreation standard of water quality is achievable and able to be maintained at the Groynes picnic area and report on the results of these investigations, including any methods by which improvements can be achieved, by June 2001;
- (c) establish the possible impacts of present sewage disposal methods in settlements adjacent to surface water bodies in the Waimakariri River Catchment and report on the results of these investigations by June 2001;

- (d) determine if wildlife is having a significant effect on water quality in lakes in the upper Waimakariri River Catchment and report on these investigations by June 2002; and
- (e) determine the contribution that birdlife makes to faecal coliform loadings in the Waimakariri River, assess the management implications of those loadings, and report on these by June 2005.

Principal reason

To determine the feasibility of improving water quality in the plains tributaries and in particular at the Groynes picnic area.

To determine if present sewage disposal in the catchment is causing significant water quality problems in surface water bodies and if wildlife is having a significant effect on the water quality of small lakes.

6.3.3 Christchurch City Council, Waimakariri District Council and Selwyn District Council

Through the exercise of their functions, including the preparation, variation, change or review of district plans, or processing of resource consent applications, the Christchurch City Council, Waimakariri District Council and Selwyn District Council:

- (a) should consider the effects of any activity or use of land on the water quality of surface water bodies;
- (b) when considering the creation and management of esplanade reserves, should evaluate the advantages of these for maintaining or improving water quality in surface water bodies;
- (c) should, where appropriate, provide for development set-backs from rivers, lakes and wetlands; and
- (d) should, where appropriate, provide for the preservation or creation of riparian strips, and for their management, to reduce contaminants entering surface water bodies.

Principal reason

The Christchurch City Council, Waimakariri District Council and Selwyn District Council in carrying out their functions under the RM Act, have the potential to adversely affect or to help maintain or improve the water quality in surface water bodies.

6.3.4 Regional Rules

The following rules control the discharge of contaminants into surface water bodies in the Waimakariri River Catchment.

Principal reason

Rules are the most effective option for protecting the water quality in lakes and rivers while providing for discharges needed by the community for health, social and economic purposes.

Discharges of contaminants

Appendix 4 details the relevant Permitted Activities specified by the Transitional Regional Plan for the discharges of contaminants and the required conditions that must be met. In particular the Transitional Regional Plan provides for discharges of: sewage tank effluent, water containing animal effluent, land drainage and aquifer or bore test water, water tracers, cooling water, stormwater, and swimming pool water. These activities are not controlled by the rules in this plan.

Rule 6.1 Discretionary Activity

The discharge of contaminants into surface water bodies in the Waimakariri River Catchment, or onto or into land within 20 metres of surface water bodies, or onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering surface water bodies, is a discretionary activity.

This rule does not apply to discharges which are specified as permitted activities in the Transitional Regional Plan.

Standards and Terms

The activity shall comply with the following standards and terms.

The water quality standards set out below shall be observed. The standards listed for each class apply after reasonable mixing of any contaminant with the receiving water and disregard the effect of any natural perturbations that may affect the water body.

The water quality standards shall be the sum total of all substances in the water body, whether they are contaminants from discharges or are existing in the background state.

(i) Class N S Water (being water managed in its natural state)

The water quality standard applies to surface waters of the Waimakariri River Catchment upstream of the confluence of the Waimakariri River with the Otukaikino Creek as outlined in Figure 6 and defined in Map 2.

Standard

The natural quality of the water shall not be altered.

(ii) Class WAIM Water (being water managed for drinking water for animals, contact recreation, fisheries, fish spawning, aquatic ecosystems, aesthetic, and cultural purposes).

The water quality standards apply to the mainstem of the Waimakariri River between its confluence with the Otukaikino Creek and the Coastal Marine Area as outlined in Figure 6 and defined in Map 2.

Standards

- (1) There shall be no production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials.
- (2) There shall be no conspicuous change in the colour or visual clarity. A conspicuous change in colour shall be defined as a change greater than 10 points on the Munsell scale. A conspicuous change in visual clarity shall be defined as a change greater than 33%, as measured by black disc.
- (3) There shall be no emission of objectionable odour.
- (4) The maximum cover of stream or river beds by periphyton as filamentous growths or mats greater than 3 millimetres thick, shall not exceed 25%.
- (5) Bacterial or fungal slime growths (also known as heterotrophic growths or sewage fungus) shall not be visible to the naked eye as plumose growths or mats.
- (6) The BOD₅ of GF/C filtered water shall not exceed 2 grams per cubic metre.
- (7) The concentration of dissolved oxygen shall exceed 80% of saturation concentration.
- (8) Fish and other aquatic organisms shall not be rendered unsuitable for human consumption.
- (9) There shall be no statistically measurable impairment of the reproductive ability of fish or of the food of fish. There shall be no toxic effect on fish or on the food of fish. For the purpose of this standard, fish, and the food of fish, do not include any organisms specified as a pest in a pest management strategy under the Biosecurity Act 1993.

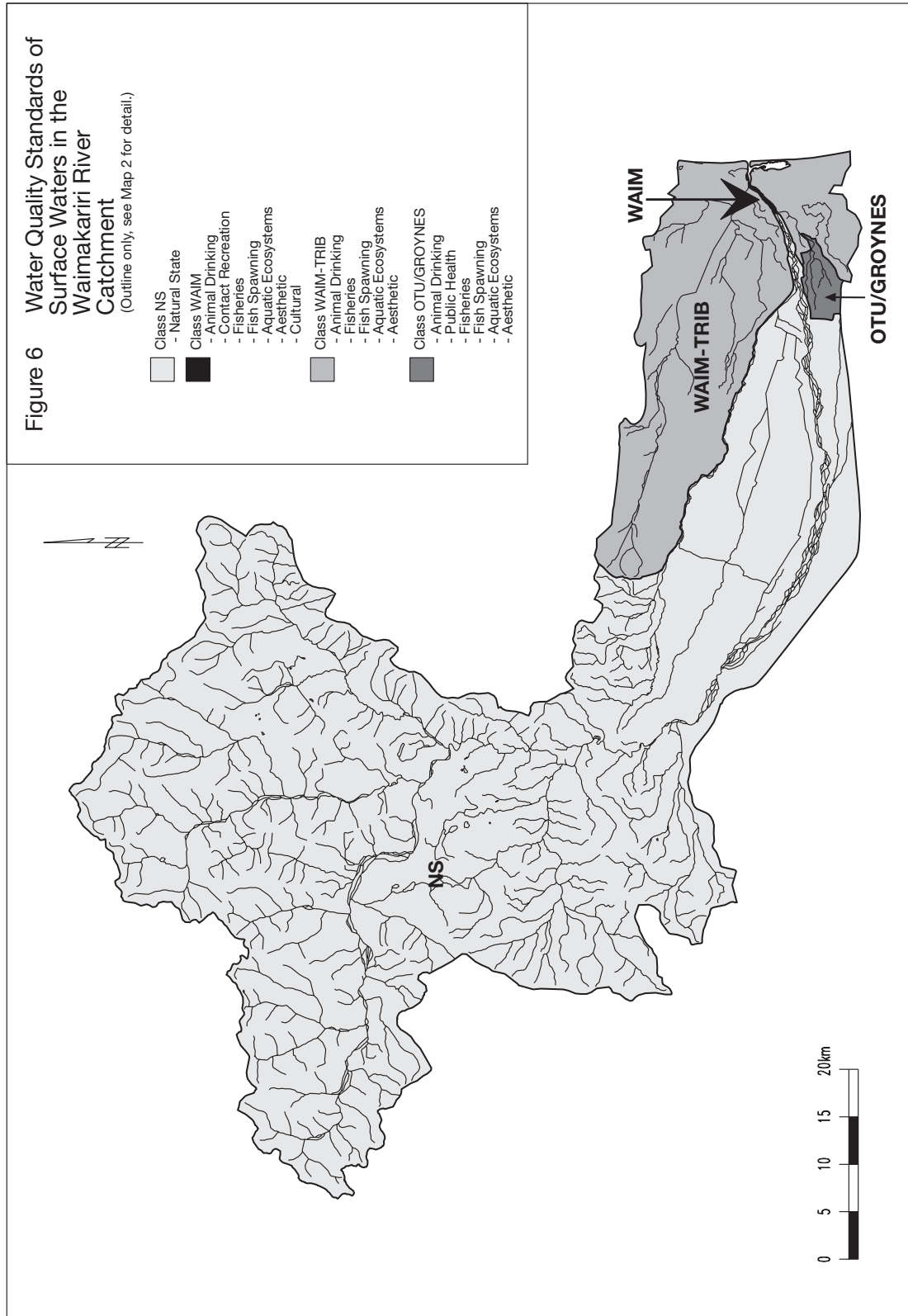


Figure 6 Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- (10) The natural temperature of the water shall not be changed by more than 3° Celsius, and shall not exceed 25° Celsius at any time, and the temperature of the water shall not adversely affect the spawning of trout or salmon during the spawning season.
- (11) The median faecal coliform concentration of not less than five samples taken within any consecutive 30 day period, shall not exceed 200 faecal coliforms per 100 millilitres; furthermore, no more than 20% of samples within any consecutive 30 day period shall exceed 800 faecal coliforms per 100 millilitres.
- (12) The quality of the water shall not be altered in those characteristics which have a direct bearing upon the objectionable nature to Tangata Whenua of contamination of surface waters by treated or untreated human sewage.
- (13) The water shall not be rendered unsuitable for consumption by farm animals.

(iii) Class WAIM-TRIB Water (being water managed for drinking water for animals, fisheries, fish spawning, aquatic ecosystems, and aesthetic purposes)

The water quality standards apply to the tributaries of the Waimakariri River downstream of its confluence with the Otukaikino Creek and including the Otukaikino Creek downstream of the Groynes picnic area as outlined in Figure 6 and defined in Map 2.

Standards

- (1) There shall be no production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials.
- (2) There shall be no conspicuous change in the colour or visual clarity. A conspicuous change in colour shall be defined as a change greater than 5 points on the Munsell scale. A conspicuous change in visual clarity shall be defined as a change greater than 20%, as measured by black disc.
- (3) There shall be no emission of objectionable odour.
- (4) The maximum cover of stream or river beds by periphyton as filamentous growths or mats greater than 3 millimetres thick, shall not exceed 40%.
- (5) Bacterial or fungal slime growth (also known as heterotrophic growths or sewage fungus) shall not be visible to the naked eye as plumose growths or mats.
- (6) The BOD₅ of GF/C filtered water shall not exceed 2 grams per cubic metre.
- (7) The concentration of dissolved oxygen shall exceed 80% of saturation concentration.
- (8) Fish and other aquatic organisms shall not be rendered unsuitable for human consumption.
- (9) There shall be no statistically measurable impairment of the reproductive ability of fish or of the food of fish. There shall be no toxic effect on fish or on the food of fish. For the purpose of this standard, fish, and the food of fish, does not include any organism specified as a pest in a pest management strategy under the Biosecurity Act 1993.
- (10) The natural temperature of the water shall not be changed by more than 3° Celsius, and shall not exceed 25° Celsius at any time, and the temperature of the water shall not adversely affect the spawning of trout or salmon during the spawning season.
- (11) The water shall not be rendered unsuitable for consumption by farm animals.

(iv) Class OTU/GROYNES Water (being water managed for drinking water for animals, fisheries, fish spawning, aquatic ecosystems, public health, and aesthetic purposes)

The water quality standards apply to the Otukaikino Creek and its tributaries at, and upstream of, the Groynes picnic area as outlined in Figure 6 and defined in Map 2.

Standards

- (1) There shall be no production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials.
- (2) There shall be no conspicuous change in the colour or visual clarity. A conspicuous change in colour shall be defined as a change greater than 5 points on the Munsell scale. A conspicuous change in visual clarity shall be defined as a change greater than 20%, as measured by black disc.
- (3) There shall be no emission of objectionable odour.
- (4) The maximum cover of stream or river beds by periphyton as filamentous growths or mats greater than 3 millimetres thick, shall not exceed 40%.
- (5) Bacterial or fungal slime growth (also known as heterotrophic growths or sewage fungus) shall not be visible to the naked eye as plumose growths or mats.
- (6) The BOD₅ of GF/C filtered water shall not exceed 2 grams per cubic metre.
- (7) The visual clarity of the water shall not be rendered so low as to be unsuitable for bathing. For visual clarity to be suitable for bathing the horizontal sighting range of a 200 millimetre black disc shall exceed 1.6 metres.
- (8) The concentration of dissolved oxygen shall exceed 80% of saturation concentration.
- (9) Fish and other aquatic organisms shall not be rendered unsuitable for human consumption.
- (10) There shall be no statistically measurable impairment of the reproductive ability of fish or of the food of fish. There shall be no toxic effect on fish or on the food of fish. For the purpose of this standard, fish, and the food of fish, does not include any organism specified as a pest in a pest management strategy under the Biosecurity Act 1993.
- (11) The natural temperature of the water shall not be changed by more than 3° Celsius, and shall not exceed 25° Celsius at any time, and the temperature of the water shall not adversely affect the spawning of trout or salmon during the spawning season.
- (12) The water shall not be rendered unsuitable for consumption by farm animals.
- (13) The natural quality of the water with respect to organisms of public health significance shall not be altered.¹⁶

Effect of Rule 6.1 on Existing Resource Consents

This rule shall affect, under section 130 of the RM Act, the exercise of existing resource consents for discharges of contaminants. When this rule becomes operative, Environment Canterbury may serve notice, under Section 128 of the RMA, on the holders of all such resource consents of its intention to review the conditions of their resource consent, where in Environment Canterbury's opinion, it is appropriate to do so in order to enable the standards and terms set by the rule to be met. The holders of resource consents shall comply with the

¹⁶ **Organisms of public health significance** means organisms likely to adversely affect human health, or that are indicative of a potential risk to human health. Examples are faecal coliforms, *E. coli*, enterococci, *Salmonella*, *Shigella*, *Campylobacter*, *Cryptosporidium* and *Giardia*.

standards and terms of this rule from the date at which the new conditions on their resource consent commences under Section 116 of the RM Act.

Rule 6.2 Non-Complying Activity

The discharge of contaminants into surface water bodies in the Waimakariri River Catchment, or onto or into land within 20 metres of surface water bodies, or onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering surface water bodies, that does not comply with the water quality standards and terms set by Rule 6.1, is a Non-Complying activity.

This rule does not apply to discharges which are specified as Permitted Activities in the Transitional Regional Plan.

6.4 Environmental Results Anticipated

Implementation of the above water quality policies and methods is expected to have all of the following environmental results:

- (1) Water retained in its natural state in all surface water bodies upstream of the confluence of the Waimakariri River with the Otukaikino Creek.
- (2) Water in the Waimakariri River mainstem downstream of the confluence of the Waimakariri River with the Otukaikino Creek, suitable for drinking water for animals, contact recreation, fisheries, fish spawning, aquatic ecosystems, aesthetic, and cultural purposes.
- (3) Water in the Kaiapoi River, Styx River, Otukaikino Creek downstream of the Groyne picnic area, and their tributaries, suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems, and aesthetic purposes.
- (4) Water in the Otukaikino Creek and tributaries at, and upstream of, the Groyne picnic area, suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems, public health, and aesthetic purposes.
- (5) Discharges of contaminants to water are provided for where appropriate standards are met and where practicable alternatives to direct discharges are not available.

6.5 Monitoring

For water quality the following environmental indicators will be monitored to assess the suitability and effectiveness of this part of the Plan, and any need for it to be reviewed. Chapter 9 sets out details of monitoring activities:

- (1) The biological, chemical and physical water quality of surface water bodies.
- (2) Environmental incidents reported to Environment Canterbury in relation to water quality.
- (3) Compliance with conditions on resource consents.

River and Lake Beds

Issues

- (1) Land uses or activities which damage:
 - the natural character, ecological, cultural, landscape, amenity and heritage values associated with rivers, lakes and wetlands;
 - reduce the flood-carrying capacity of rivers; and
 - damage the stability of banks and structures.

Objectives

- (1) Enable people to benefit from river and lake beds, while:
 - safeguarding sources of drinking water, life supporting capacity and mahinga kai;
 - protecting wahi tapu and other wahi taonga;
 - preserving the natural character of rivers, lakes and wetlands;
 - protecting outstanding natural features and landscapes;
 - maintaining and enhancing amenity, habitat and heritage values;
 - protecting the flood carrying capacity of rivers and the stability of banks and structures; and
 - protecting habitat of trout and salmon.

Monitoring

- (1) State of natural character;
- (2) State of natural features and landscapes, habitat of trout and salmon and indigenous fauna, heritage values, wahi tapu and wahi taonga;
- (3) Perception of Tangata Whenua on the status of mahinga kai;
- (4) State of amenity values;
- (5) Trends in activities in river and lake beds;
- (6) Flood carrying capacity;
- (7) State of banks;
- (8) State of structures;
- (9) Problems reported to the Regional Council in relation to river and lake beds;
- (10) Compliance with conditions on resource consents and permitted activity conditions.

Policies

- (1) Control, in the bed of any river or lake, disturbances of the bed, structures, the introduction of destruction of any plant, the deposition of any substance, and any reclamations.
- (2) Promote measures to restore or enhance values associated with river and lake beds.

Environmental Results

- (1) Preservation of natural character;
- (2) Protection of natural features, landscapes, habitat of trout and salmon and indigenous fauna, heritage values, wahi tapu and wahi taonga;
- (3) Maintenance of enhancement of amenity values;
- (4) Reasonable needs of people to carry out activities in riverbeds satisfied;
- (5) No reduction in flood carrying capacity or damage to riverbanks as a result of activities in riverbeds;
- (6) The stability of essential structures maintained.

Methods

- (1) Code of Practice
- (2) Investigations
- (3) Information and Education
- (4) Territorial councils
- (5) Regional Rules

This is a summary only, the text that follows contains the actual Council policy.

7 River and Lake Beds

7.1 Introduction

A function of Regional Councils under the RM Act, is the control of the following activities in relation to the bed¹⁷ of any lake or river:

- (a) the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of any structure or part of any structure in, on, under, or over the bed;
- (b) the excavation, drilling, tunnelling, or other disturbance of the bed;
- (c) the introduction or planting of any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed;
- (d) the deposition of any substance in, on, or under the bed;
- (e) the reclamation or draining of the bed;
- (f) the entering or passage across the bed; and
- (g) the disturbance, removal, damage, or destruction of any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals in, on, or under the bed.

Environment Canterbury can also introduce controls on land use in riverbeds, or their margins, for soil conservation purposes, the maintenance and enhancement of water quality, the avoidance or mitigation of natural hazards, and the prevention or mitigation of any adverse effects related to hazardous substances. Related functions of district councils under the RM Act are the control of any actual or potential effects of activities in relation to the surface of water in rivers and lakes and the control of any actual or potential effects of the use, development or protection of land.

Environment Canterbury has extensive areas of riverbed within the lower catchment vested in Environment Canterbury and has responsibilities in addition to those specified in the RM Act, under the Waimakariri River Improvement Act 1922, the Soil Conservation and Rivers Control Act 1941, the Reserves Act 1977, the Public Bodies Leases Act 1969, and the Biosecurity Act 1993.

Some of the riverbeds in the Waimakariri River Catchment, particularly the lower mainstem of the Waimakariri River, have extensive river works. The purpose of these works is to constrain the rivers within their present courses and to contain floods to a design standard without overtopping their banks, to prevent bank erosion, and to maintain them as drainage outfalls. In addition, in the Waimakariri River across the plains, there are in-river works to divert water from the river, or to win gravel and sand from the river. These activities could conflict with the maintenance of:

- (a) the natural character of rivers, the habitats of indigenous flora and fauna, the habitats of trout and salmon, the intrinsic value of ecosystems, the quality and extent of and access to mahinga kai, wahi tapu, wahi taonga and heritage sites;
- (b) the amenity values of rivers; and
- (c) outstanding natural features and landscapes.

The amount of use made of riverbeds is expected to increase. It is important that activities be managed to reduce the conflicts that inevitably develop.

There are nine main lakes in the upper Waimakariri River Catchment. They remain wholly, or for the most part in their natural state, and most, if not all, are significant natural features and habitats, and part of significant landscapes. The scenic and habitat values of lakes in

¹⁷ Refer to Appendix 1 for the RM Act definition of the "bed".

the catchment are potentially at risk from activities or uses of their beds and margins, such as the erection of structures or excavation of bed material.

7.2 Issue Resolution

Issue 7.1

Land uses or activities within the beds of rivers and lakes in the Waimakariri River Catchment which:

- (a) damage the natural character of rivers, lakes and wetlands;
- (b) damage areas of significant indigenous vegetation and significant habitats of indigenous fauna, and the habitat of trout and salmon;
- (c) damage the intrinsic values of ecosystems;
- (d) damage wahi tapu and other wahi taonga, or heritage sites ;
- (e) reduce amenity values, or damage outstanding natural features and landscapes;
- (f) reduce the flood-carrying capacity of rivers;
- (g) damage the banks of rivers;
- (h) have adverse effects on the stability or performance of essential structures within riverbeds.

Particular land uses and activities of concern include: building of structures, alterations to river banks, river diversions, dumping of waste materials and gravel, vegetation or tree plantings, inadequate weed control, gravel abstraction in sensitive areas, and recreational vehicle use.

Objective 7.1

Enable present and future generations to gain cultural, social, recreational, economic, health, and other benefits from river and lake beds in the Waimakariri River Catchment while:

- (a) safeguarding the existing value of rivers and lakes for efficiently providing sources of drinking water for people and their animals;
- (b) safeguarding the life-supporting capacity of the water in the beds of rivers and lakes, including its associated: aquatic ecosystems, significant habitats of indigenous fauna, and areas of significant indigenous vegetation;
- (c) safeguarding the existing value of rivers and lakes for providing mahinga kai for Tangata Whenua;
- (d) protecting wahi tapu and other wahi taonga of value to Tangata Whenua;
- (e) preserving the natural character of rivers, lakes and wetlands and protecting them from inappropriate use and development;
- (f) protecting outstanding natural features and landscapes from inappropriate use and development;
- (g) maintaining and enhancing amenity values;
- (h) protecting and where appropriate enhancing the habitat and heritage values of river and lake beds;
- (i) protecting and where appropriate enhancing the flood carrying capacity of rivers;
- (j) protecting the banks of rivers and lakes, and the stability and

- performance of essential structures in their beds; and
- (k) protecting the significant habitat of trout and salmon.

Principal Reason

To protect those values of river and lake beds which otherwise may be progressively degraded or lost altogether, the flood carrying capacity of rivers, and the stability of riverbanks and structures.

Policy 7.1

Control in the bed of any river or lake in the Waimakariri River Catchment:

- (a) the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of any structure or part of any structure in, on, under, or over the bed;
- (b) the excavation, drilling, tunnelling, or other disturbance of the bed;
- (c) the introduction or planting of any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed;
- (d) the deposition of any substance in, on, or under the bed;
- (e) the reclamation or draining of the bed; and
- (f) the disturbance, removal, damage, or destruction of any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals in, on, or under the bed;

so that (a) to (k) of Objective 7.1 are achieved and in particular:

- (i) the flood hazard to adjacent land is not increased;
- (ii) disturbance to protected wildlife and their breeding habitat, and indigenous vegetation is minimised;
- (iii) salmon spawning sites are not disturbed;
- (iv) wetlands are protected;
- (v) the braided character of the Waimakariri River where it exists is sustained;
- (vi) the natural patterns, colours and textures of the riverbed areas are maintained;
- (vii) above Woodstock, defined in Figure 4 and Map 1, river and lake beds are kept free of weeds and other exotic vegetation; and
- (viii) below Woodstock, defined in Figure 4 and Map 1, the present natural character of river beds is at least maintained.

Explanation

Policy 7.1 identifies those activities or uses of river and lake beds likely to conflict with those factors identified in Objective 7.1 (a) to (k) which are to be safeguarded, preserved, protected, maintained, and where appropriate enhanced.

Principal Reason

To protect values of rivers, lakes and their beds in the Waimakariri River Catchment and to protect the community from flooding, erosion, and disruption resulting from the failure of essential structures.

Methods

The methods used or to be used by Environment Canterbury are:

- (a) code of practice
- (b) information and education
- (c) regional rules

Policy 7.2

Promote measures in river and lake beds in the Waimakariri River Catchment to restore or enhance those values in (a) to (k) of Objective 7.1.

Explanation

Over the last century and a half some river beds in the Waimakariri River Catchment have changed substantially as a result of river works, plant and animal pests, and land clearance and development for farming. Lake beds have been much less affected. Some degraded river beds could be restored to their natural state or at least enhanced to improve their natural character, habitat, amenity and cultural value. In places access could also be improved.

Principal Reason

To restore or enhance river and lake beds which have been degraded.

Methods

1. The methods used or to be used by Environment Canterbury are:
 - (a) code of practice
 - (b) investigations
 - (c) information and education
 - (d) Community Groups
 - (e) Environment Canterbury works
2. The Christchurch City Council, Waimakariri District Council and Selwyn District Council in exercising their functions should consider the matters in Section 7.3.4.

7.3 Methods

7.3.1 Code of Practice

Environment Canterbury has prepared an environmental works manual to provide information to assist those carrying out river control, drainage or other works in river rating districts. Environment Canterbury will ensure that persons undertaking works in river and lake beds are aware of this manual and its contents. The manual provides information on the location of various values associated with rivers, and guidelines and instructions to minimise adverse environmental effects. Environment Canterbury will incorporate into the manual iwi concerns in regard to mahinga kai and provide for consultation with runanga where wahi tapu and wahi taonga are concerned, or are uncovered in the course of carrying out river works.

Principal Reason

When carrying out works in river or lake beds, Environment Canterbury has the opportunity to protect, restore or enhance values in the beds of rivers and lakes.

7.3.2 Investigations

Environment Canterbury, in consultation with affected parties and with Waimakariri District Council, Selwyn District Council and Christchurch City Council, will identify those areas of river and lake beds needing restoration or enhancement and the measures to be promoted.

Principal Reason

Detailed surveys of river and lake bed present condition and need for restoration and enhancement have not been carried out.

7.3.3 Information and Education

Environment Canterbury will disseminate information about the resource values of rivers and lakes in the Waimakariri River Catchment and the effects of activities on those matters and values which Objective 7.1 seeks to protect.

Principal Reason

Knowledge about the effects of activities on the environment and how to avoid, remedy, or mitigate adverse effects, will assist compliance with regional rules.

7.3.4 Christchurch City Council, Waimakariri District Council and Selwyn District Council

Through the exercise of their functions, including the preparation, variation, change or review of district plans, or processing of resource consent applications, the Christchurch City Council, Waimakariri District Council and Selwyn District Council:

- (a) should consider the effects of their decisions on the achievement of the Objective for river and lake beds (Chapter 7, Objective 7.1), including access to and along rivers and lakes for construction and maintenance of flood protection works; and
- (b) when considering the creation of esplanade reserves, should evaluate the advantages of these for achieving the Objective for river and lake beds (Chapter 7, Objective 7.1), including access to and along rivers and lakes for construction and maintenance of flood protection works.

Principal Reason

Land use adjacent to rivers and lakes will have effects on them. The effects of land use can be controlled by Christchurch City Council, Waimakariri District Council, and Selwyn District Council within their districts. As well the RM Act provides for district and city councils to establish esplanade reserves particularly when land adjacent to rivers and lakes is subdivided.

7.3.5 Community Groups

In the Waimakariri River Catchment, Environment Canterbury will promote and facilitate the establishment of community groups to act as guardians of rivers, lakes and their beds, to identify river beds which need restoration and enhancement and to prepare and implement proposals to restore or enhance degraded river and lake beds.

Principal Reason

Community involvement in environmental restoration projects is likely to lead to greater community ownership and ongoing management of restored areas. It also fosters greater understanding of environmental issues and how to avoid, remedy, or mitigate the adverse effects of activities.

7.3.6 Environment Canterbury Works

As the owner of extensive areas of the Waimakariri Riverbed, Environment Canterbury undertakes restoration and enhancement works. These works include: amenity and native tree and shrub planting; mowing of grassy areas; provision and maintenance of signage, vehicle tracks, walking tracks and fences; rubbish clearance; removal of abandoned vehicles; weed clearance; and provision of vehicle-free areas, 4WD areas and off road motorcycle areas. Environment Canterbury also requires persons who lease such land to refrain from practices that could degrade the environment.

Principal Reason

Environment Canterbury manages this public land for flood protection purposes. However, public use is an important secondary consideration. Environment Canterbury's management provides benefits for the community as a whole, whilst protecting and enhancing the riverbed ecosystem, and providing flood protection.

7.3.7 Regional Rules

The following rules control activities in riverbeds and lakebeds in the Waimakariri River Catchment inland of the Coastal Marine Area.

Principal Reason

Rules are the most effective option for protecting river and lake bed values while enabling activities the community needs to undertake for cultural, social, recreational and economic reasons.

Rule 7.1 Permitted Activities

The following activities, except as provided for in Rules 7.2(a), 7.3(a), 7.3(b), 7.3(c) 7.3(d), 7.3(f), and 7.3 (g), are permitted activities:

- (a) the disturbance of the bed¹⁸ of the mainstem of the Waimakariri River;
- (b) the disturbance of the bed of any tributary river upstream of the Waimakariri River Gorge Bridge near Sheffield;
- (c) the disturbance of the bed of the Eyre River;

provided that:

- (i) the quantity of bed material disturbed is less than 10 cubic metres per week per person, and less than 50 cubic metres per annum per person;
- (ii) the disturbance does not occur within 50 metres of any structure located in the riverbed, other than flood protection works¹⁹ as provided for in (iv) below;
- (iii) the disturbance does not occur under flowing water or in, on, under or over any wetland in the bed;
- (iv) the disturbance does not occur within 5 metres of the banks of the river or any flood protection works; and
- (v) the disturbance does not occur within 100 metres of colonies of birdlife, nesting or rearing their young in riverbed gravels from 1 September to 31

¹⁸ **The disturbance of the bed** includes, excavation, drilling, tunnelling, or other disturbance of the bed. Note that the term excavation includes removal of gravel from the bed.

¹⁹ **Flood protection works** are physical features intended to provide flood protection or to maintain or increase the flood carrying capacity or stability of a river channel, including: stopbanks, permeable and non-permeable groynes, rockwork or concrete blocks used for bank protection, tree and vegetation plantings and anchors, floodgates and culverts and their support structures, berm drains, gauges, roads and tracks.

January of the following year, or physically disturb any indigenous bird's nest currently in use.

Rule 7.2 Permitted Activities

The following activities in, on, under, or over the bed of any river in the Waimakariri River Catchment are permitted activities:

- (a) the disturbance of the bed;
- (b) the deposition of excavated bed material, rockwork, rock used for bank protection, or cut plant material, but not including concrete blocks;
- (c) the introduction or planting of any plant or any part of any plant (whether exotic or indigenous);
- (d) the disturbance, removal, damage, or destruction of any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals;

provided that:

- (i) the activity is for the purpose of:
 - (1) the repair or maintenance of flood protection works²⁰;
 - (2) the repair or maintenance of existing transport or transmission line or other network utility infrastructure (including roads, bridges, railways, power lines, telephone lines, communication lines) located in the river bed;
 - (3) the establishment and maintenance of river cross-section survey sites;
 - (4) the control or eradication of exotic vegetation (e.g., broom, gorse, grass, lupin); or
 - (5) the maintenance and enhancement of indigenous vegetation, habitats of indigenous fauna, and habitat of salmon and trout;
- (ii) the disturbance of the bed does not occur within 100 metres of colonies²¹ of birdlife, nesting or rearing their young in riverbed gravels from 1 September to 31 January of the following year, or physically disturb any indigenous bird's nest currently in use;
- (iii) no plant or any part of any plant, whether exotic or indigenous, is introduced or planted where it will adversely affect flood carrying capacity;
- (iv) no plant or part of any plant defined as a pest in a pest management strategy, or defined as an unwanted organism under the Biosecurity Act 1993, is planted or introduced;
- (v) no plant or any part of any plant, including slash, debris, prunings and thinnings, is deposited in a position where it will block or divert the river flow;

²⁰ Repair or **Maintenance of flood protection works** is work required to keep flood protection works in good condition, and includes: the removal of weeds from stopbanks; layering and anchoring of trees; clearance of vegetation from flood fairways; repairing rockwork, or concrete blocks used for bank protection; repairing fences, clearance of vegetation from watercourses in the beds; repair of flood protection structures; planting to replace dead or damaged trees or shrubs; new plantings of the same species associated with flood protection works; movement or removal of bed material; and the construction or maintenance of tracks to give access for the purpose of maintaining flood protection works.

²¹ A colony comprises more than one pair of birds of a species that nests in colonies.

- (vi) “above Woodstock”, defined in Figure 4 and Map 1, any plant or any part of any plant introduced or planted is indigenous to New Zealand and to the locality, or is the same exotic species as plants growing in the vicinity of the activity undertaken;
- (vii) the activity is not located in, on, under, or over any wetland in the bed;
- (viii) for the purpose of maintenance and enhancement of indigenous vegetation, habitats of indigenous fauna, and habitat of salmon and trout:
 - (1) the quantity of bed material disturbed is less than 10 cubic metres at any one site;
 - (2) the disturbance does not occur within 5 metres of any flood protection works; and
 - (3) the disturbance does not occur within 50 metres of any structure, other than flood protection works, located in the riverbed.
- (ix) any rockwork or rock used for bank protection deposited in the bed, shall be the same or similar colour to the greywacke material in the riverbed.

Rule 7.3 Permitted Activities

The following activities in, on, under, or over the bed of any river or lake in the Waimakariri River Catchment are permitted activities:

- (a) the use, reconstruction²², removal, or demolition of any structure or part of any structure, and any disturbance of the bed necessary to carry out the activity;
- (b) the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of stock fences “above Woodstock”, defined in Figure 4 and Map 1, and any disturbance of the bed necessary to carry out the activity;
- (c) the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of: hydrological recording stations, public signs, temporary fish traps, or temporary fish barriers; and any disturbance of the bed necessary to carry out the activity;
- (d) except for the bed of lakes Blackwater, Grace, Grasmere, Hawdon, Letitia, Marymere, Mavis, Minchin, Pearson, Rubicon, Sarah, and Vagabonds Inn, the disturbance of the bed for the purposes of laying underground cables or underground pipes, other than pipes for conveying or discharging contaminants, and the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of underground cables or underground pipes, other than pipes for conveying or discharging contaminants;
- (e) the erection or replacement of telecommunications infrastructure or electrical transmission line infrastructure where this occurs on existing support structures and does not disturb the bed.
- (f) except for the bed of lakes Blackwater, Grace, Grasmere, Hawdon, Letitia, Marymere, Mavis, Minchin, Pearson, Rubicon, Sarah, and Vagabonds Inn, the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of: a mai mai; or a structure or part of any structure which is for public pedestrian use; and any disturbance of the bed necessary to carry out the activity;
- (g) the disturbance of not more than 10 square metres of the bed of any lake for the purposes of carrying out research, or maintaining or enhancing habitat values, natural character, or ecological functioning; and

²² Reconstruction of a structure includes repair or maintenance of the structure.

- (h) the deposition of substances forming the permanent part of a structure, and of other substances immediately removed after completion, as the result of the authorised erection, reconstruction, placement, alteration, or extension of any structure or part of any structure;

provided that:

- (i) flood protection works or other structures are not damaged;
- (ii) demolished structures are completely removed from the bed;
- (iii) the banks of the river or lake are not de-stabilised;
- (iv) the activity, except use, does not occur within 100 metres of colonies of birdlife, nesting or rearing their young in riverbed gravels from 1 September to 31 January of the following year, or physically disturb any indigenous bird's nest currently in use;
- (v) where any fence bluffs off into any river or lake, a stile is installed and maintained to enable passage by the public over the fence;
- (vi) any mai mai is not larger in area than 4 square metres, is constructed of untreated timber and natural vegetation camouflage; and
- (vii) any temporary fish trap or temporary fish barrier is for the purpose of monitoring salmon, trout, or eel populations, or harvesting trout or salmon ova, by the North Canterbury Fish and Game Council or an Eel Management Committee, and the structure is removed and the bed restored to pre-activity condition within 3 months of commencement of the monitoring or harvesting.

Rule 7.4 Discretionary Activities

The following activities in the Waimakariri River Catchment, where not provided for as a permitted activity in Rules 7.1, 7.2 or 7.3, or a prohibited activity in Rule 7.5 in Chapter 7 of this Plan, are discretionary activities:

- (a) the disturbance of the bed of any river;
- (b) the deposition of excavated bed material, rockwork, rock or concrete blocks used for bank protection, or cut plant material in, on, or under the bed of any river;
- (c) the introduction or planting of any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed of any river;
- (d) the disturbance, removal, damage, or destruction of any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals in, on, or under the bed of any river or lake;
- (e) the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of any structure or part of any structure in, on, under, or over the bed of any river or lake;
- (f) the reclamation or drainage of any river bed; and
- (g) the introduction or planting of any indigenous plant or any part of any indigenous plant in, on, or under the bed of any lake.

Financial Contribution

A financial contribution, in the form of money, land, or any combination thereof, may be required as a condition of any resource consent granted under Rule 7.4(a), (b), (c), (d) or (f).

The financial contribution shall be made for the purposes of:

- (a) restoring, to pre-activity conditions at the same location or in close proximity, any natural or physical resources which suffer damage or loss as a result of the activity; or

- (b) ensuring that there are positive effects on the environment, at the same or any other location in the catchment, to offset any adverse effects of the activity on natural or physical resources.

The financial contribution shall be determined as follows:

- (a) Where the environment can be restored, the financial contribution shall be limited to:
 - (i) the costs of measures of restoration actually undertaken or to be undertaken; or
 - (ii) the costs of restoring the environment to a pre-activity state.
- (b) Where the environment can not be restored, the financial contribution shall be limited to an amount calculated by the consent authority as if the environment could be restored to a pre-activity state.
- (c) Where a financial contribution is received for damage to the environment that can not be restored, the contribution shall be used for the purpose of environmental enhancement or maintenance of rivers or streams and their margins and wetlands within the Waimakariri River Catchment.

Rule 7.5 Prohibited Activities

Except where provided for as a permitted activity in Rules 7.1, 7.2 or 7.3, the following are prohibited activities in the Waimakariri River Catchment for which no resource consent shall be granted:

- (a) **the deposition of any substance except:**
 - (i) excavated river bed material;
 - (ii) rockwork and rock, or concrete blocks used for bank protection;
 - (iii) cut plant material;
 - (iv) contaminants resulting from an authorised discharge; and
 - (v) substances used in the authorised erection, reconstruction, placement, alteration or extension of any structure or part of any structure;

in, on, or under the bed of any river or lake;
- (b) **the erection or placement of a dam or weir in, on, or over the bed of the mainstem of the Waimakariri River from its source down to the Coastal Marine Area;**
- (c) **the erection or placement of a dam or weir in, on, or over the bed of any river, including tributaries, “above Woodstock” defined in Figure 4 and Map 1;**
- (d) **the disturbance of the bed of lakes Blackwater, Grace, Grasmere, Hawdon, Letitia, Marymere, Mavis, Minchin, Pearson, Rubicon, Sarah, and Vagabonds Inn except where necessary for:**
 - (i) **the use, reconstruction, alteration, removal or demolition of any structure or part of any structure as provided for in Rule 7.3 (a);**
 - (ii) **the use, erection, reconstruction, placement, alteration, extension, removal, or demolition of stock fences, hydrological recording stations, public signs or temporary fish traps or barriers as provided for in Rule 7.3 (b) and (c); or**
 - (iii) **the purpose of carrying out research, or maintaining or enhancing habitat values, natural character, or ecological functioning as provided for in Rule 7.3 (g);**
- (e) **the erection, reconstruction, placement, alteration, or extension of any structure or part of any structure in, on, under, or over the bed of lakes Blackwater, Grace, Grasmere, Hawdon, Letitia, Marymere, Mavis, Minchin, Pearson, Rubicon, Sarah, and Vagabonds Inn except for the purposes of stock fencing, hydrological recording stations, or public signs as provided for in Rule 7.3 (b) and (c);**

- (f) the introduction or planting of any exotic plant or any part of any exotic plant in, on, or under the bed of any lake; and
- (g) the reclamation or drainage of any lake bed.

7.4 Environmental Results Anticipated

Implementation of the above river and lake bed policies and methods is expected to have all of the following environmental results:

- (1) Preservation of the natural character of rivers, lakes and wetlands.
- (2) Protection of outstanding natural features and landscapes; habitat of trout and salmon and indigenous fauna, heritage values; wahi tapu and other wahi taonga.
- (3) Safeguarding of mahinga kai, sources of drinking water and life supporting capacity of water in rivers and lakes.
- (4) Maintained or enhanced amenity values.
- (5) The reasonable needs of people for structures in riverbeds; to disturb the beds of rivers; to introduce or plant plants in riverbeds; to disturb, remove, damage or destroy any plant or part of any plant, or the habitats of any such plant or animals in riverbeds satisfied.
- (6) No reduction in flood carrying capacity of rivers or damage to riverbanks as a result of activities in riverbeds.
- (7) The stability and performance of essential structures maintained.

7.5 Monitoring

For river and lake beds the following environmental indicators will be monitored to assess the suitability and effectiveness of this part of the Plan, and any need for it to be reviewed. Chapter 9 sets out details of monitoring activities:

- (1) The state of the natural character of rivers, lakes and wetlands.
- (2) The state of natural features and landscapes, habitat of trout and salmon and indigenous fauna, and heritage values, wahi tapu and wahi taonga.
- (3) The perception of Tangata Whenua on the status of mahinga kai.
- (4) The state of aquatic and river associated ecosystems.
- (5) The state of amenity values.
- (6) Trends in activities in river and lake beds.
- (7) The flood carrying capacity of rivers.
- (8) The state of the banks of rivers and lakes.
- (9) The stability and performance of essential structures.
- (10) Environmental incidents reported to Environment Canterbury in relation to river and lake beds.
- (11) Compliance with conditions on resource consents and with permitted activity conditions.

Part 3 Processes and Monitoring

8 Cross-Boundary Processes

8.1 Introduction

This plan covers part of the Christchurch City Council area, part of Selwyn District and part of Waimakariri District (Figure 1). The population living within the area covered by the plan will benefit from the protection given to surface water resources, river and lake beds. Conversely they will be affected by restrictions imposed on water abstraction and by rules which regulate and prohibit discharges of contaminants to rivers, lakes, or land or which regulate or prohibit activities in the beds of rivers and lakes.

Integrated resource management for the Waimakariri River has two key elements:

- (a) Ensuring that resource issues which cross the boundary of the three districts or the Coastal Marine Area are dealt with by all agencies involved in management of those areas.
- (b) Ensuring consistency of management along the whole river system.

Cross-boundary issues in the coastal marine area are those which involve Christchurch City Council, Waimakariri District Council, and the Minister of Conservation.

8.2 Processes for Dealing With Cross Boundary Issues

Environment Canterbury seeks to establish working relationships and protocols with other resource management agencies. The desired outcome is that as inter-agency issues emerge, agreed processes are followed by the relevant authorities and as far as possible the issues resolved without recourse to the Environment Court. The approaches Environment Canterbury intends to pursue include:

- (a) discussions on the content of district plans to ensure the development of complementary policies;
- (b) the formation of inter-agency committees, working parties or other liaison mechanisms. As appropriate this will include representation from non-governmental organisations such as runanga and sector interest groups;
- (c) the use of joint consent hearings with territorial authorities when there are consent applications in which both have an interest;
- (d) the use of statutory processes of the RM Act where there are inter-agency issues which can not be resolved and the effects on the environment are of regional significance; and
- (e) meetings with Ngai Tuahuriri Runanga.
- (f) ensuring that weed clearance by Environment Canterbury as riverbed owner and carried out under a Regional Pest Management Strategy is consistent with this plan.

The lower portion of the Waimakariri River forms part of the Coastal Marine Area. This includes the river downstream of Ferry Road, and Brooklands Lagoon. Although this plan does not regulate activities in the Coastal Marine Area, management of the River has effects on the Coastal Marine Area in relation to matters such as water quality or activities on the surface of the water. Environment Canterbury will take cross boundary effects into account when considering resource consents under this plan and for the Coastal Marine Area immediately downstream.

9 Monitoring and Review

9.1 Monitoring Procedure

The procedures to be used to review the content of this plan and to monitor the suitability and effectiveness of the plan as a means of achieving its objectives and policies are outlined below. The results of these monitoring programmes will be reported regularly to Environment Canterbury. These reports will include analyses of the effectiveness of this plan's measures in achieving the objectives and policies.

To meet the state of the environment, and plan suitability and effectiveness, monitoring requirements of the RM Act (Section 35), Environment Canterbury will carry out two types of monitoring:

- (a) monitoring the environment to assess whether specific anticipated environmental results are achieved; and
- (b) compliance monitoring of resource consents and permitted activities to ensure compliance with conditions.

9.2 Monitoring Anticipated Environmental Results

The following tables outline the environmental monitoring that Environment Canterbury will undertake to assess whether anticipated environmental results are achieved. One or more of the environmental indicators may be used to monitor any particular anticipated environmental result.

TABLE 3 SURFACE WATER QUANTITY ANTICIPATED ENVIRONMENTAL RESULTS AND ASSOCIATED MONITORING AND REPORTING

Anticipated environmental results	Environmental indicator(s) ²³	Method of monitoring/ investigation	Frequency of monitoring/ investigation	Reporting
1. Preservation of the natural flows and levels of rivers, lakes and wetlands in the catchment "above Woodstock"	Lake and wetland water levels and river flows and levels	Two river flow measurement sites and gaugings in accordance with the surface water monitoring programme Lake levels only if necessary	Continuous and as required	Five yearly
2. Protection of the braided character of the Waimakariri River, where it exists "below Woodstock", and of groundwater recharge from the river	Braided character of the river	Surveys of braiding pattern and extent in relation to flow	Five yearly	Five yearly
	River flows	River flow gauging to determine groundwater recharge in accordance with surface water monitoring programme	Ongoing	Five yearly

²³ The environmental indicator(s) may apply to one or more of the anticipated environmental results.

Anticipated environmental results	Environmental indicator(s) ²³	Method of monitoring/ investigation	Frequency of monitoring/ investigation	Reporting
3. Sufficient depth of water and sufficient flow to maintain the fisheries, wildlife, and recreation associated with rivers in the catchment	The state of aquatic ecosystems and associated wildlife	Eighteen river flow measurement sites and gaugings in accordance with the surface water quantity monitoring programme Liaison with Fish and Game Council and the Department of Conservation	Continuous and as required Ongoing	Annually Five yearly
4. The reasonable needs of people for water including domestic, stock, irrigation and industrial supply and effluent disposal satisfied.	Trends in the total abstraction of water relative to its reliability of supply	Analysis of water permits and river flow information	Ongoing	Five yearly
5. Lake level and river flow requirements for mahinga kai, wahi tapu and wahi taonga satisfied	Abundance and quality of mahinga kai	Liaison with Tangata Whenua	Ongoing	Annually
6. Efficiency in the use of water	Adoption of efficient methods of using water	Liaison with water permit holders. Survey water use methods	Ongoing Five yearly	Five yearly Five yearly
All anticipated environmental results	Environmental incidents reported to Environment Canterbury in relation to water quantity	As reported	As reported	Approx. six weekly for Environment Canterbury Committee

TABLE 4 WATER QUALITY ANTICIPATED ENVIRONMENTAL RESULTS AND ASSOCIATED MONITORING AND REPORTING

Anticipated environmental results	Environmental indicator(s) ²⁴	Method of monitoring/ investigation	Frequency of monitoring/ investigation	Reporting
1. Water retained in its natural state in all surface water bodies upstream of the confluence of the Waimakariri River with Otukaikino Creek	The biological, chemical and physical water quality of surface water bodies	Three water quality monitoring sites in the mainstem of the Waimakariri River above Otukaikino Creek	Quarterly for indicator bacteria, dissolved reactive phosphorus, total phosphorus, forms of dissolved inorganic nitrogen, total nitrogen, pH, conductivity, dissolved oxygen, turbidity, and chlorophylla and temperature.	Annually
		Water quality monitoring at three lakes in the upper catchment	Once in spring and autumn each year for turbidity, pH, conductivity, dissolved reactive phosphorus, total phosphorus, dissolved inorganic nitrogen, and total nitrogen and temperature.	Annually
2. Water in the Waimakariri River mainstem downstream of the confluence of the Waimakariri River with the Otukaikino Creek, suitable for drinking water for animals, contact recreation, fisheries, fish spawning, aquatic ecosystems, aesthetic and cultural purposes		Three water quality monitoring sites on the Waimakariri River mainstem	Fortnightly for dissolved oxygen, pH, biochemical oxygen demand, suspended solids, ammonia nitrogen, total grease, and indicator bacteria and temperature.	Annually

²⁴ The Environmental Indicator(s) may apply to one or more of the anticipated environmental results. Refer to Table 5 for aquatic ecosystem, wildlife and mahinga kai monitoring programmes.

Anticipated environmental results	Environmental indicator(s) ²⁵	Method of monitoring/ investigation	Frequency of monitoring/ investigation	Reporting
3. Water in the Kaiapoi River, Styx River, Otukaikino Creek downstream of the Groynes picnic area, and their tributaries, suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems, and aesthetic purposes		Benthic invertebrate sampling (biological sampling) at ten sites on the lower plains tributaries Six water quality monitoring sites on the plains tributaries	Twice yearly Quarterly for indicator bacteria dissolved reactive phosphorus, total phosphorus, forms of dissolved inorganic nitrogen, total nitrogen, pH, conductivity, dissolved oxygen, turbidity and temperature.	Annually Annually
4. Water in the Otukaikino Creek and tributaries at and upstream of the Groynes picnic area, suitable for drinking water for animals, fisheries, fish spawning, aquatic ecosystems, public health, and aesthetic purposes		Two sites on the Otukaikino Creek	Weekly from December to February for indicator bacteria until sources of contamination better understood	Annually
5. Discharges of contaminants to water are provided for where appropriate standards are met and where practicable alternatives to direct discharges are not available.	Trends in authorised discharges.	Analysis of discharge authorisations.	Ongoing	Five-yearly
All anticipated environmental results	Environmental incidents reported to Environment Canterbury in relation to water quality	As reported	As required	Approx. six weekly for Environment Canterbury Committee

²⁵ The Environmental Indicator(s) may apply to one or more of the anticipated environmental results. Refer to Table 5 for aquatic ecosystem, wildlife and mahinga kai monitoring programmes.

TABLE 5 RIVER AND LAKE BED ANTICIPATED ENVIRONMENTAL RESULTS AND ASSOCIATED MONITORING AND REPORTING

Anticipated environmental result	Environmental indicator(s) ²⁶	Method of monitoring/ investigation	Frequency of monitoring/ investigation	Reporting
1. Preservation of the natural character of rivers, lakes and wetlands	The state of the natural character of rivers, lakes and wetlands	Liaison with the Department of Conservation and district councils, assessment and survey, including inspections, photographic records and analysis of remote sensing information	Ongoing and five yearly	Five yearly
2. Protection of outstanding natural features and landscapes; habitat of trout and salmon and indigenous fauna, heritage values; wahi tapu and other wahi taonga	The state of natural features and landscapes, habitat of trout and salmon and indigenous fauna, heritage values, wahi tapu and wahi taonga	Liaison with the Department of Conservation, district council and Tangata Whenua, assessment and survey including inspections, photographic records and analysis of remote sensing information	Ongoing and a five yearly survey	As required and five yearly
3. Safeguarding of mahinga kai, sources of drinking water and life supporting capacity of water in rivers and lakes	The perception of Tangata Whenua on the status of mahinga kai,	Liaison with Tangata Whenua	Ongoing and a five yearly survey	As required and five yearly
	The state of aquatic and river associated ecosystems	Liaison with the Department of Conservation and Fish and Game Council	Ongoing	As required and five yearly
		Surveys of the health of Aquatic Ecosystem habitats	Five yearly	Five-yearly

²⁶ The environmental indicator(s) may apply to one or more of the anticipated environmental results.

4. Maintained or enhanced amenity values	The state of amenity values	Surveys of people who use or value river and lake beds, assessment and survey including inspections, photographic records and analysis of remote sensing information.	Five yearly	Five yearly
5. The reasonable needs of people for structures in riverbeds; to disturb the beds of rivers; to introduce or plant plants in riverbeds; to disturb, remove, or damage or destroy any plant or part of any plant, or the habitats of any such plant or animals in riverbeds satisfied	Trends in authorised activities in river and lake beds	Analysis of authorised activities	Ongoing	Five-yearly
6. No reduction in flood carrying capacity of rivers or damage to riverbanks as a result of activities in riverbeds	The flood carrying capacity of rivers The state of the banks of rivers and lakes	Land-based or aerial photogrammetric riverbed surveys Surveys of the banks of rivers and lakes where necessary	In accordance with the riverbed survey monitoring programme Five yearly and ongoing	Annually and five yearly depending on location As required and five yearly
7. The stability and performance of essential structures maintained	The stability and performance of essential structures	Liaison with owners of essential structures	Five yearly and ongoing liaison	As required and five yearly
All anticipated environmental results	Environmental incidents reported to Environment Canterbury in relation to river and lake beds	As reported	As required	Approx. six weekly for Environment Canterbury Committee

9.3 Compliance Monitoring

The following table sets out the compliance monitoring and reporting that Environment Canterbury will undertake to ensure that activities comply with consent conditions. While the method and frequency of monitoring have been indicated, all resource consents have conditions which may require more frequent and particular methods of monitoring. The indicated method and frequency is a general description of the minimum monitoring that will be undertaken. In addition, Environment Canterbury will respond to complaints received about any particular matter. The response may include monitoring of resource consents or unauthorised activities, and subsequent enforcement action.

TABLE 6 COMPLIANCE MONITORING AND REPORTING

Type of authorisation	Method of monitoring	Frequency of monitoring	Reporting
Permits to take water.	Assessment of abstraction records, or on-site monitoring of abstraction rates.	Once every three years but throughout the period when actual river flows are close to set minimum flows.	Annually.
	Fish screen site inspections.	Once every three years.	Annually.
Permits to dam, use, discharge or divert water.	Inspections of structures during and after construction.	As required.	Annually.
	Flows and levels for large diversions, discharges or structures.	Once every three years but throughout the period when actual river flows are close to set minimum flows.	Annually.
Discharge permits.	Sampling of discharge quality, monitoring of rate of discharge, and monitoring impact on receiving water.	At least annually, but varying in accordance with conditions on permits and achievement of standards by permit holder	Annually.
Land use consents for disturbances of the beds of rivers or the siting of structures in the beds of rivers.	Site inspections during and after construction, gravel excavation or processing.	At least annually.	Annually.
Permitted activities.	Respond to complaints reported.	As required.	Approx. six weekly at Environment Canterbury Committee.

9.4 Review Procedure

The RM Act states that a full review of any plan must be commenced not later than ten years after becoming operative, and may be reviewed if necessary before then.

The monitoring procedures outlined above will indicate any need for an earlier formal review of the plan.

In the event of an early review, or at the time of the ten year review, a formal report to Environment Canterbury will assess the need for the plan to change and recommend any changes required.

10 Making Resource Consent Applications and Providing Information

10.1 Form of Application

Applications for a resource consent must be made in accordance with the procedures and forms contained in the RM Act and regulations made under the RM Act. Suitable forms are available from Environment Canterbury's offices at Christchurch and Timaru.

10.2 Information to be Provided

The information that must be provided with any application for a consent to:

- (a) take water from any surface waters of the Waimakariri River or its tributaries, or from hydraulically connected groundwater;
- (b) dam, divert or use water in the Waimakariri River or its tributaries, or discharge water into the Waimakariri River or its tributaries from stored or diverted water;
- (c) discharge contaminants into the Waimakariri River or its tributaries or onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering these water bodies;
- (d) use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure, in, on, under, or over the bed of any river or lake in the Waimakariri River Catchment;
- (e) excavate, drill, tunnel or otherwise disturb the bed of any river or lake in the Waimakariri River Catchment;
- (f) introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed of any river or lake;
- (g) deposit any substance in, on, or under the bed of any river or lake;
- (h) reclaim or drain the bed of any river or lake; or
- (i) disturb, remove, damage, or destroy any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals in, on, or under the bed of any lake or river;

is specified in Section 88 and the Fourth Schedule of the RM Act. In particular it must include an assessment of the environmental effects that the proposed activity may have on the environment.

If in the opinion of Environment Canterbury further information is required, it may request additional details under Section 92 of the RM Act. Environment Canterbury will only request further information where the amount or detail originally provided is insufficient in relation to the scale and significance of the effects that the activity may have on the environment.

Section 88(2) of the RM Act provides that an application for a resource consent must include an assessment for environmental effects in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment". In other words, if the environmental effects are likely to be minor less detail will be required than if the effects could be significant or their extent is not known. Sections 88 and 92, and the Fourth Schedule of the RM Act are reproduced in Appendix 2.

Particular information is required as follows:

- (a) Particular information required for a consent application for a discretionary activity under Rule 5.1, Chapter 5:
 - (i) The need for the quantities of water sought.
 - (ii) The availability of alternative supplies of water including alternative public or community reticulated supplies.
 - (iii) Details of provisions to be made to prevent fish entering water intakes.
 - (iv) In the case of takes from groundwater:
 - (1) the effect the take has on surface flows;
 - (2) the effects the take has on neighbouring bores; and
 - (3) the effects the take has on other authorised takes.
 - (v) The effects on flows of water in the river from which the water is to be taken, and consequential effects on those values identified in (a) to (h) of Objective 5.1, near the point of take; and the effect on other authorised takes.
- (b) Particular information required for a consent application for a discretionary activity under Rule 5.2, Chapter 5:
 - (i) The effects on flows of water in the river from a use, diversion, discharge or dam and any downstream effects.
 - (ii) The effects on habitats, flora and fauna (including trout and salmon), cultural values, wetlands, amenity and landscapes.
 - (iii) Details of provisions to be made for fish screens and fish bypasses.
 - (iv) The effects on the availability of any augmented water for abstraction and the efficiency of the use of that water.
 - (v) The safety of a dam in terms of its construction and design, and risks and effects of a collapse of any structure.
- (c) Particular information required for a consent application for a non-complying activity under Rule 5.3, Chapter 5:
 - (i) The extent to which the natural flows of any river are affected by the activity.
 - (ii) The effects on habitats, flora and fauna (including trout and salmon), cultural values, wetlands, amenity, landscapes, and natural character.
- (d) Particular information required for a consent application for a discretionary activity under Rule 6.1, Chapter 6:
 - (i) Contaminant discharge details (chemical composition, volume, rate and method of discharge).
 - (ii) An assessment showing how the water quality standards in the river will be met, including details of the extent of any mixing zone and information showing that the mixing zone is the practicable minimum.
 - (iii) Any adverse effects arising from the existence of the mixing zone.
 - (iv) Details of the operation and the management of the treatment and discharge systems, contingency plans in the event of failure of plant, and contact personnel in emergency or for complaint inquiries.
 - (v) An assessment of alternative methods of treatment and discharge.

- (vi) The effects of the discharge on cultural, social, recreational, economic or other benefits of the water quality in water bodies.
- (e) Particular information required for a consent application for a discretionary activity under Rule 7.4, Chapter 7:
 - (i) The effects on flows of water in the river or on any structure or on the banks of the river.
 - (ii) The effects on habitats, flora and fauna (including trout and salmon), cultural values, wetlands, amenity and landscapes.
 - (iii) The species of plant material introduced to the bed of a river and its potential to spread.
 - (iv) The quantities of bed material to be excavated or stockpiled in the bed of a river.
 - (v) Any effects on public access to the bed of a river.
 - (vi) The timing of the activity in the bed of a river.
 - (vii) If within 50 metres of a structure, the written consent of the owner of the structure.

Appendices

Appendix 1 Definition of Terms

The use of italics in this Appendix indicates meanings taken from Section 2, 3, 5 or 77c of the RM Act.

Agricultural effluent

Liquid wastes generated from farming of animals where such wastes are collected for the purpose of disposal.

Allocative efficiency

Allocation of resources to uses that make optimum use of them.

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.

Augmentation

Augmentation means in relation to water, the addition of water to increase surface flows or increase storage of water in an aquifer.

Authorised

Authorised means authorised as a permitted activity by a rule in a regional plan, expressly allowed by a resource consent granted by Environment Canterbury, or allowed as an existing use by Section 20 of the Resource Management Act 1991.

Bed

In relation to any river, the space of land which the waters of the river cover at its fullest flow without overtopping its banks.

In relation to any lake, the space of land which the waters of the lake cover at its highest level without exceeding its margins.

BOD

Biochemical oxygen demand, oxygen consumed by the degradation of organic matter by organisms, usually measured at 20°C and over five days (BOD₅).

Coastal environment

An environment in which the coast usually is a significant part or element. The coastal environment will vary from place to place depending upon the extent to which it affects or is (directly) affected by coastal processes and the management issue concerned. It includes three distinct but interrelated parts: the coastal marine area; the active coastal zone; and the land backdrop. The coastal environment includes at least the coastal marine area, the water, plants, animals, and the atmosphere above it; and all tidal waters and foreshore whether above or below mean high water springs, dunes, beaches, areas of coastal vegetation and coastal associated fauna, areas subject to coastal erosion or flooding, salt marshes, sea cliffs and coastal wetlands, including estuaries.

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.*

Colony

Comprises more than one pair of birds of a species that nests in colonies.

Contaminant

Includes any substance (including gases, [odorous compounds] 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 for which:

- (a) *A resource consent is required for the activity, and the consent authority has no power to decline that resource consent; and*
- (b) *The consent authority must specify in the plan or proposed plan matters over which it has reserved control; and*
- (c) *The consent authority's power to impose conditions on the resource consent is restricted to the matters that have been specified under paragraph (b); and*
- (d) *The activity must comply with the standards, terms, or conditions, if any, specified in the plan or proposed plan.*

Discharge

Includes emit, deposit and allow to escape.

Discretionary Activity

Means an activity for which:

- (a) *A resource consent is required for the activity; and*
- (b) *The consent authority may grant the resource consent with or without conditions or decline the resource consent; and*
- (c) *The activity must comply with the standards, terms, or conditions, if any, specified in the plan or proposed plan.*

Disturbance of the bed

Includes, excavation, drilling, tunnelling, or other disturbance of the bed. Note that the term disturbance of the bed includes removal of gravel from the bed.

Drainage works

Drainage works include rivers and drains presently managed to collect and convey stormwater safely away so that it does not backup or pond on the land surface.

Ecosystem

Ecosystem means plants, animals, their physical environment, and the dynamic processes that link them.

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.*

Efficiency

Efficiency includes both technical and allocative efficiency, and means that for any given level of output, inputs are minimised.

Enhancement

To intensify or increase in quality or value.

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 (a) to (c) of this definition or which are affected by those matters.*

Environment Canterbury

is the name by which the Canterbury Regional Council is referred to in this plan.

Environmental Results Anticipated

The intended result or outcome on the environment as a consequence of implementing the policy or policies and methods of implementation. It provides a means of assessing the success of the objectives, policies and methods.

Erosion

Erosion includes processes of wearing away of the land surface by natural agents and the transport of the material that results.

Explanation

A statement to provide background and facilitate understanding. Explanations are not intended to extend or distort the literal meaning and intent of policies.

Faecal coliform

Faecal coliform means a group of bacteria that are almost always associated with the gut of warm-blooded animals. Their presence is taken as an indication of the presence of faecal material, and with it, the possibility that above a certain concentration of indicator bacteria, the risk of disease is sufficiently high to render the water unsuitable for bathing and other contact recreational activities.

Fauna

Fauna means animals, whether introduced or indigenous.

Filamentous

Fibrous or threadlike.

Flora

Flora means plants, and includes both indigenous and introduced flora.

Flood Protection Works

Physical features intended to provide flood protection or to maintain or increase the flood carrying capacity or stability of a river channel, including: stopbanks, permeable and non-permeable groynes, rockwork or concrete blocks used for bank protection, tree and vegetation plantings and anchors, floodgates and culverts and their support structures, berm drains, gauges, roads and tracks.

Habitat

Habitat means the natural home of plants or animals, or communities of them. It has both biological and physical components which among other things may include water, rocks, soil, or vegetation.

Human sewage

Means human excrement including urine and faecal material.

Hydraulically connected groundwater

Means groundwater that is laterally connected to a river, with a stream depletion factor less than 100 days calculated using the method published by Jenkins, C T (1977) Computation of rate and volume of stream depletion by wells, in Techniques of Water Resources Investigation of the United States Geological Survey, Chapter D1, Book 4, 3rd printing.

Indigenous Flora and Fauna

This includes plants and animals which were introduced by Maori but excludes flora and fauna introduced to New Zealand since the arrival of Europeans.

Industrial effluent

Liquid wastes generated from manufacturing or processing activities with the exception of gravel washing water.

Infrastructure

Means physical structures and facilities supporting a network utility system, including: roads, bridges, tunnels, pipelines, transmission towers and poles, transformers, power lines, telephone lines, railway lines and communication cables.

Intrinsic 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.*

Introduced Flora and Fauna

This includes only plants and animals introduced to New Zealand since the arrival of Europeans.

Issue

A matter of concern to the region's community in relation to some aspect of natural and physical resources and the environment of the region. These matters are addressed in the Operative RPS as either: significant resource management issues of the region; or resource management issues of significance to iwi.

Kaitiakitanga

Means the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Maori in relation to natural and physical resources; and includes the ethic of stewardship.

Koiwi tangata

Any remains of a Maori person that do not show signs of having been turned into or incorporated into an artifact.

Lake

Means a body of fresh water which is entirely or nearly surrounded by land.

Land

Land includes land covered by water and the air space above land.

Landscapes

Natural features and landscapes are categories that sometimes overlap. As a general rule features tend to be smaller in extent and are experienced from the outside, while landscapes cover large areas and are experienced from within. Natural means a predomination of elements that are natural rather than made by people.

Local authority

Local Authority means a regional council or territorial authority.

Mahinga kai

Food and other resources, and the areas that they are sourced from.

Maori

Ordinary people. Since 1820 used to distinguish the native, indigenous, people of this country, the Tangata Whenua.

Margin

Means land immediately adjacent to the bed of a river, wetland, lake or estuary which is likely to be affected by a high water table, flooding, fluvial erosion, or sediment deposition, and often contains distinctive vegetation. The size of the margin will vary according to local site factors but may extend to the limits demarcated by natural river terraces and constructed stop banks.

Mean annual daily low flow

The average, for a number of years of the annual lowest daily flows, that is calculated at a recorder site by selecting the lowest daily flow (averaged over 24 hours) for each year of record, summing those values and then dividing the total by the number of years of record.

Mean annual instantaneous low flow

The average, for a number of years of the annual lowest instantaneous flows, that is calculated at a recorder site by selecting the lowest instantaneous flow for each year of record, summing those values and then dividing the total by the number of years of record.

Method

A specific action, procedure, programme or technique adopted to carry out a policy.

Mitigate

In relation to an effect, means to lessen or eliminate the severity or incidence of an effect, and includes compensation both before and after the effect.

ml

The abbreviation for millilitre.

mm

The abbreviation for millimetre.

Natural and physical resources

Includes land, water, air, soil, minerals, and energy, all forms of plants and animals (whether native to New Zealand or introduced), and all structures.

Natural features

Natural features and landscapes are categories that sometimes overlap. As a general rule features tend to be smaller in extent and are experienced from the outside, while landscapes cover large areas and are experienced from within. Natural means a predomination of elements that are natural rather than made by people.

Non-Complying Activity

Means an activity for which:

- (a) A resource consent is required for the activity; and*
- (b) The consent authority may grant the resource consent with or without conditions or decline the resource consent.*

Non-point discharge

Run-off or leachate from land, onto or into land, air, a water body or the sea.

Objective

Objective means a statement of a desired outcome.

Organisms of public health significance

Means organisms likely to adversely affect human health, or that are indicative of a potential risk to human health. Examples are faecal coliforms, E. coli, enterococci, Salmonella, Shigella, Campylobacter, Cryptosporidium and Giardia.

Periphyton

Plants, usually algae, attached to solid surfaces in water bodies.

Permitted Activity

Means an activity for which a resource consent is not required for the activity if it complies with the standards, terms, or conditions, if any, specified in the plan or proposed plan.

Person

Includes the Crown, a corporation sole, and also a body of persons, whether corporate or unincorporate.

Plan

Means a regional plan or district plan.

Plumose

With feathery filaments.

Point discharge

A discharge from a specific and identifiable outlet, onto or into land, air, a water body or the sea.

Policy

A statement that guides or directs decision-making. A policy indicates a general commitment to a general course of action in working towards an objective.

Principal Reason

The principal reasons for adopting the objectives, policies, and methods of implementation set out in the statement.

Prohibited Activity

Means an activity for which no application may be made for that activity and a resource consent must not be granted for it.

Protected Wildlife

Any indigenous flora or fauna specified as absolutely protected under the Wildlife Act 1953.

Region

In relation to a regional council, means the region of the regional council as determined in accordance with the Local Government Act 2002.

Repair or Maintenance of Flood Protection Works

Is work required to keep flood protection works in good condition, and includes: the removal of weeds from stopbanks; layering and anchoring of trees along banks; clearance of vegetation from flood fairways; repairing rockwork, or concrete blocks used for bank protection; repairing fences, clearance of vegetation from watercourses in the beds; repair of

flood protection structures; planting to replace dead or damaged trees or shrubs; new plantings of the same species associated with flood protection works; movement or removal of bed material; and the construction or maintenance of tracks to give access for the purpose of maintaining flood protection works.

Restoring to pre-activity conditions

Means restoring to a state similar to or better than that existing prior to carrying out the activity.

Restricted Discretionary Activity

Means an activity for which:

- (a) *A resource consent is required for the activity; and*
- (b) *The consent authority must specify in the plan or proposed plan matters to which it has restricted its discretion; and*
- (c) *The consent authority's powers to decline a resource consent and to impose conditions are restricted to matters that have been specified under paragraph (b); and*
- (d) *The activity must comply with the standards, terms, or conditions, if any.*

Riparian

Of or on a river bank or stream bank.

River

Means a continually or intermittently flowing body of fresh water; and includes a stream and 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).

Stream depletion or Surface water depletion

Is a reduction in stream flow due to groundwater abstraction, and may be either direct depletion, or reduction of groundwater flow to the stream.

Stream depletion factor

Is a factor, measured in units of days, giving an indication of degree of connection between a well and a stream. It is derived using the equation $sdf = a^2S/T$, where "a" is the perpendicular distance from the well to the stream, "S" is the unconfined storativity, and "T" is the transmissivity. The sdf is inversely related to the degree of connection, i.e., a low stream depletion factor indicates good connection.

Structure

Means any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft.

Sustainable management

Means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while:-

- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations;*
- (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

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

Tangata Whenua

People of the land, the people who hold the turangawaewae and the manawhenua in an area, according to tribal and hapu custom.

Taonga

Treasured possessions, includes both tangible and intangible treasures, for example, the Maori language.

Territorial authority

Means a territorial authority within the meaning of the Local Government Act 2002.

“Use”

Means the utilisation of water in a water body for a purpose of exclusive value to the user which cannot be described as a take, a dam, a divert, or a discharge; including the use of the flow in a water body to operate a turbine, a waterwheel, sluicing equipment or other mechanical devices; but not including a use in relation to the surface of the water body, such as swimming, fishing or boating.

Wahi Taonga

Places (wahi) of special value.

Wahi Tapu

Places of sacred and extreme importance.

Water body

Means fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located in the coastal marine area.

Wetland

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.

Appendix 2 Sections 88, 92 and the Fourth Schedule

The use of italics in this Appendix indicates reproduction from the RM Act.

Section 88 Making an application —

- (1) *A person may apply to the relevant local authority for a resource consent.*
- (2) *An application must –*
 - (a) *be made in the prescribed form and manner; and*
 - (b) *include, in accordance with Schedule 4, an assessment of environmental effects in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.*
- (3) *If an application does not include an adequate assessment of environmental effects or the information required by regulations, a local authority may, within five working days after the application was first lodged, determine that the application is incomplete and return the application, with written reasons for the determination, to the applicant.*
- (4) *If, after an application has been returned as incomplete, that application is lodged again with the relevant local authority, that application is to be treated as a new application.*
- (5) *Sections 357 and 358 apply to a determination that an application is incomplete.*

Section 92 Further information may be required —

- (1) *A consent authority may, at any reasonable time before the hearing of an application for a resource consent or before the decision to grant or refuse the application (if there is no hearing), by written notice, require the applicant for the consent to provide further information relating to the application.*
- (2) *A consent authority may commission a report from any person on any matters raised in relation to the application, including a review of any information provided in an application under section 88 or under this section if, –*
 - (a) *in the opinion of the consent authority, the activity for which the resource consent is sought may have a significant adverse environmental effect; and*
 - (b) *the applicant is notified before the report is commissioned.*
- (3) *Any further information requested or a report commissioned under this section must be available at the office of the consent authority no later than 10 working days before the hearing of an application.*
- (4) *This section does not apply to reports prepared under section 42A.*
- (5) *Sections 357 and 358 apply to subsections (1) and (2).*

Fourth Schedule - Assessment Of Effects On The Environment

1. **Matters that should be included in an assessment of effects on the environment**

Subject to the provisions of any policy statement or plan, an assessment of effects on the environment for the purposes of section 88 should include –

- (a) *A description of the proposal:*
- (b) *Where it is likely that an activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:*
- (c) *Repealed.*
- (d) *An assessment of the actual or potential effect on the environment of the proposed activity:*

- (e) *Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use:*
- (f) *Where the activity includes the discharge of any contaminant, a description of –*
 - (i) *The nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects; and*
 - (ii) *Any possible alternative methods of discharge, including discharge into any other receiving environment:*
- (g) *A description of the mitigation measures (safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:*
- (h) *An identification of those persons interested in or affected by the proposal, the consultation undertaken, if any, and any response to the views of those consulted:*
- (i) *Where the scale or significance of the activity's effect are such that monitoring is required, a description of how, once the proposal is approved, effects will be monitored and by whom.*

2. *Matters that should be considered when preparing an assessment of effects on the environment*

Subject to the provisions of any policy statement or plan, any person preparing an assessment of the effects on the environment should consider the following matters:

- (a) *Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects:*
- (b) *Any physical effect on the locality, including any landscape and visual effects:*
- (c) *Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:*
- (d) *Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural, or other special value for present or future generations:*
- (e) *Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants:*
- (f) *Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.*

Appendix 3 Overview of the Main Waimakariri River Catchment Aquatic Values

River system	Outstanding natural feature or landscape (based on their scenic settings)	Ecosystem values		Level of development	Tangata whenua values	Amenity values
		Significant fauna and significant indigenous vegetation	Significant habitat			
Waimakariri River above Kowai confluence	1. All lakes 2. Mainstem of the Waimakariri River, particularly the Waimakariri Gorge between the Esk confluence and Woodstock 3. All water bodies in Arthurs Pass National Park	Indigenous Longjawed galaxias, alpine galaxias and blue duck Eel and other native fish Crested Grebe Paradise duck Wrybill Plover Black-fronted tern Wetland indigenous vegetation in the margins of lakes Exotic Salmon Trout Canada geese	Fast flowing alpine streams with forest margins All water bodies Lakes and margins Wide river valleys Braided bare shingle rivers Wetland indigenous vegetation in the margins of lakes Stable streams for spawning Lakes, pools and riffles Wide river valleys and lakes	High level of naturalness free from significant interference by human practices	Historical source of food on greenstone expeditions to the West Coast Lake Pearson of statutory significance	Scenic Canoeing Jetboating Rafting Angling Tramping Hunting Lake boating
Waimakariri River below Kowai confluence	Waimakariri Gorge	Indigenous Wrybill Plover Black-fronted tern Eel Other native fish Kowhai Exotic Salmon Trout	Braided bare shingle river beds Pools Margins of streams Margin of Waimakariri River at Kimberley Salmon passage to spawning water Pools and riffles	Stockwater and irrigation diversions Darfield water supply Shingle abstraction Highly modified settings with river control works Below motorway bridge one industrial discharge and Kaiapoi sewage discharge		Canoeing Jetboating Rafting Angling Picnicking Swimming Whitebaiting Duck shooting

Kaiapoi River including Greigs Drain and Courtenay Stream		Indigenous Eel, whitebait and other native fish Exotic Duck Trout Salmon	All All All Gravel bed spawning	Numerous drains Stopbanks in lower reaches Water takes	Mahinga kai	Kaiapoi Port (historic) Boating Angling Whitebaiting Duck shooting
Cust River including Cust Main Drain and No 7 drain		Indigenous Eel, whitebait and other native fish Exotic Trout	All All	Highly modified settings Stopbanks Drainage Water takes	Mahinga kai	Angling
Cam River including South, North and Middle Brooks		Indigenous Eel, whitebait and other native fish Exotic Trout Duck Salmon	All All All Gravel bed spawning	Highly modified settings Stopbanks in lower reaches Drains Rangiora sewage discharge Water takes	Mahinga kai	Angling Whitebaiting Duck shooting
Otukaikino Creek		Indigenous Eel, whitebait and other native fish Exotic Trout Duck Salmon	All All All Gravel bed spawning	Highly modified settings Stopbanks in lower reaches Drains Belfast sewage discharge	Mahinga kai Wahi taonga	Swimming and picnicking at the Groynes Angling Otukaikino Wetland
Styx River including Kaputone Creek		Indigenous Eel, and other native fish Exotic Trout Duck	All All All	Highly modified settings Flood gates and stopbanks in lower reaches Drains Water takes	Mahinga kai Wahi taonga	Trout fishing Angling Whitebaiting

Appendix 4 Relevant Permitted Activity Rules in the Transitional Regional Plan

ABSTRACTIONS

The Transitional Regional Plan authorises the following abstractions of natural water, except geothermal water, for beneficial uses, within the Waimakariri River Catchment, subject to the specified conditions, as Permitted Activities:

- (1) The abstraction of natural water, from any surface water resource, provided that the volume abstracted shall not exceed 10 cubic metres per day, per property, at a rate not exceeding 5 litres per second, except for those abstractions permitted under (2).
- (2) The abstraction of natural water from the Waimakariri River downstream of Waimakariri River Gorge Bridge (Map Ref. L35:331-604); provided that the volume abstracted shall not exceed 100 cubic metres per day, per property, at a rate not exceeding 10 litres per second.
- (3) The abstraction of natural water from any groundwater resource, provided that the volume abstracted shall not exceed 20 cubic metres per day, per property, from any bore and the abstraction bore shall be further than 50 metres from any bore on a neighbouring property, or from any surface water resource, (i.e. from the riverbank of a river or stream, or the high water mark of any lake, pond or wetland) except for those abstractions permitted under (4).

Abstractions of groundwater in the West Melton/Yaldhurst area are excluded from this authorisation. The West Melton/Yaldhurst area is defined as that area bounded by Intake Road, Station Road, Hoskyns Road through to Main South Road, Carmen Road, Russley Road, Ryans Road, Guys Road and a line 1,000 metres north of, and parallel to, the Old West Coast Road.

- (4) The abstraction of natural water from any groundwater resource provided that the volume abstracted shall not exceed 100 cubic metres per day from any bore, per property, at a rate not exceeding 10 litres per second and:
 - (a) the abstraction shall occur on a property greater than 20 hectares in area; and
 - (b) there shall be a minimum separation distance of 100 metres: between any abstracting bore and bores on adjoining properties that are used to abstract groundwater, and between any abstracting bore and any surface water resource.

Abstractions of groundwater in the West Melton/Yaldhurst area are excluded from this authorisation. The West Melton/Yaldhurst area is defined as that area bounded by Intake Road, Station Road, Hoskyns Road through to Main South Road, Carmen Road, Russley Road, Ryans Road, Guys Road and a line 1,000 metres north of, and parallel to, the Old West Coast Road.

- (5) The abstraction of groundwater up to 100 litres per second from a single bore for aquifer or bore testing purposes provided that the abstraction shall be for a period of no longer than 72 cumulative hours once per year.
- (6) The abstraction of groundwater from any de-watering system less than 10 metres deep for construction site de-watering purposes.

CONDITION

The above authorisations are subject to the following condition:

A fish screen shall be operated and maintained on the pump suction intake of any surface water abstraction, so that fish are prevented from passing into the intake at all times.

For the purposes of this general authorisation, property is defined as any area of contiguous land in one ownership, or in more than one ownership if utilised as a single operating unit, and may include a number of lots and/or titles.

USE, DIVERSIONS, DAMMING AND DISCHARGES OF WATER

The Transitional Regional Plan authorises the following diversions, damming and discharges of natural water within the Waimakariri River Catchment, subject to the specified conditions, as Permitted Activities:

- (1) The diversion and discharge of natural water, except geothermal water, associated with minor realignments of, and minor improvements to, watercourses within the Canterbury Region, subject to within any urban area the catchment area above the point of diversion not exceeding 40 hectares.
- The term 'minor realignments of, and minor improvements to', is defined as the diversion of natural water from within a surface flowing river, stream or drain, and the return of the flow to the original course of the waterbody provided that the points of diversion and return shall be within one property.
- Works associated with a diversion may still require a resource consent under Section 13 of the Resource Management Act 1991.
- (2) The damming of intermittently-flowing rivers and streams that flow only after rainfall, or during periods of wet weather, subject to the following conditions:
- (a) The dam shall not exceed three metres in height from its lowest point to the spillway overflow level.
 - (b) The spillway overflow shall not be constructed in fill (i.e. repositioned soils).
 - (c) The potential maximum volume of impounded water shall not exceed 1,000 cubic metres.
 - (d) The dam shall not be constructed within 100 metres upstream or downstream of property boundaries nor within 500 metres immediately upstream of a dwelling or building.
 - (e) The damming shall have no detrimental effect on any domestic or stock water supply or on any public water supply.
 - (f) This authorisation shall not apply to the part of any stream which is used during the irrigation season as a distributary of an irrigation scheme.
- (3) The damming of rivers and streams, to allow the construction of drop structures, for the purpose of controlling active riverbed erosion, subject to the dam not exceeding 2 metres in height from its lowest point to the overflow level.
- (4) The damming of rivers and streams by floodgates for the purpose of controlling flood events or the effects of tides, subject to the following conditions:
- (a) The damming shall only occur as a result of flood events or the effects of tides, when the level in the receiving water exceeds the level in the discharging river or stream.
 - (b) The discharge pipe shall be less than 0.16 m² in area (e.g. a diameter less than 450 mm).
 - (c) The damming shall have been lawfully established prior to 28 September 1991.

Note that works associated with a dam may still require a resource consent under Section 13 of the Resource Management Act 1991.

DISCHARGES OF CONTAMINANTS

The Transitional Regional Plan authorises the following discharges within the Waimakariri River Catchment, subject to the specified conditions, as Permitted Activities:

Discharge of Sewage Tank Effluent

The discharge of sewage tank effluent into the ground, subject to the following conditions:

- (1) The discharge shall only be domestic sewage and shall not exceed 2,000 litres per day from one installation. The total discharge on any one property shall not exceed the volumes specified in the following table:

Property Size	Maximum Daily Discharge	Equivalent Domestic Installation
Up to 8 ha	3,000 litres	1.5
8 to 40 ha	4,000 litres	2.0
40 to 200 ha	6,000 litres	3.0
Above 200 ha	10,000 litres	5.0

- (2) The discharge shall be from a sewage tank installed either in accordance with the New Zealand Standard NZS 4610: Household Septic Tank Systems or with the approval of the appropriate officer of the relevant territorial authority.
- (3) Where highest groundwater levels can be closer than 30 metres from the ground surface, the discharge shall be treated so that the final discharge contains less than 1,000 faecal coliform bacteria per 100 ml sample (see condition (5)).

(4) The following separation distances shall be maintained between bores and discharge systems:		
	Bore less than 70m deep drawing water from an unconfined aquifer	Bore greater than 70m deep or drawing water from an artesian aquifer below the aquifer into which the effluent is discharged
Public Supply Bore abstracting greater than 20 m³/day of water used for domestic purposes	1,000m up-gradient 200m in any other direction	100m in any direction.
Public Supply Bore abstracting less than 20m³/day of water used for domestic purposes.	200m up-gradient 50m in any other direction	50m in any direction
Any Bore not used for Public Supply	50m up-gradient 30m in any other direction (see condition (5))	20m in any direction
<p>(5) Where highest groundwater levels are deeper than 30 metres from the ground surface, effluent can be discharged down a soakage hole. The up-gradient separation distance of 50 metres between the disposal system and a bore not used for public water supply as set out in the above table shall be increased to 100m (see condition (d)).</p> <p>(6) The discharge shall be located further than 20m from any surface water resource or from the mean spring high water mark of the sea.</p> <p>(7) Discharges from dwellings resulting from subdivisions approved or proposed after 28 September 1991, are not authorised by this general authorisation unless conditions (1) – (6) are met; and</p> <p style="padding-left: 20px;">(a) the subdivision creates only one additional lot from which domestic sewage can be discharged; or</p> <p style="padding-left: 20px;">(b) if as a consequence of the subdivision, the volume and location of existing septic tank effluent discharges do not change; or</p> <p style="padding-left: 20px;">(c) the minimum lot size of the subdivision is greater than or equal to four hectares.</p> <p>(8) Notwithstanding conditions (1) – (6), existing disposal systems for which Drainage and Plumbing permits have been granted by the relevant territorial authority and which are correctly installed in accordance with requirements on the relevant permit by 28 September 1991 shall be authorised by this General Authorisation. Any modification, repair or extension of existing disposal systems shall not be exempted by this condition, unless the change satisfies condition (3).</p> <p>(9) Disposal systems serving any facility in an area not subject to the issue of a Drainage and Plumbing permit by the relevant territorial authority shall not be authorised by this general authorisation.</p>		

Discharge of Water Containing Animal Effluent

The discharge of water containing animal effluent onto the ground, subject to the following conditions:

- (1) The effluent shall only be derived from pigs, cows or hens.
- (2) Where the effluent is to be spread on the property on which it originates:
 - (a) The total volume produced shall not exceed 2,000 litres per day of undiluted effluent, calculated according to the following table:

Stock Type	Daily Volume Produced Per Animal (litres)
Dry Sows and Gilts	4.2
Milking Sows	6.0
Boars	5.3
Weaners (5-10 weeks)	1.1
Growers to Pork (10-17 weeks)	2.5
Growers to Bacon (10-24 weeks)	3.3
Factory Supply Cows*	5.4
Town Supply Cows*	5.4
Laying Hens	0.1

*Only the effluent deposited on the dairy yard is included here. The usual design criterion is 10% of total daily production.

- (b) The following information shall be supplied to the Canterbury Regional Council, on request by the Pollution Control Manager, Canterbury Regional Council, by the person or organisation exercising or intending to exercise the authority granted by this general authorisation:
 - (i) The location, legal description and owner of the land involved.
 - (ii) The volume of effluent produced per day.
 - (iii) The nitrogen content of the effluent, calculated using the following table:

Stock Type	Nitrogen Produced Per Animal Each Year (kg)
Dry Sows and Gilts	11.3
Milking Sows	32.8
Boars	13.5
Weaners (5-10 weeks)	2.9
Growers to Pork (10-17 weeks)	6.8
Growers to Bacon (10-24 weeks)	9.1
Factory Supply Cows	6.5
Town Supply Cows	8.8
Laying Hens	0.5

- (iv) A full description of the effluent collection and storage system.
- (v) A full description of the equipment used to spread the effluent.
- (vi) A scaled plan of the farm showing boundaries, wells (including neighbour's wells within 30m of the farm boundary), buildings and areas to be spread with effluent.
- (vii) An explanation of how the system will be managed so that it complies with conditions (4) to (7).

- (3) Where the effluent is to be spread on a property other than that on which it originated, the following information shall be supplied to the Canterbury Regional Council, on request by the Pollution Control Manager, Canterbury Regional Council, by the person or organisation exercising or intending to exercise the authority granted by this general authorisation:**
- (a) By the owner or occupier of the property on which the effluent is produced:**
- (i) The location, legal description and owner of the property on which the effluent is produced.**
 - (ii) The volume of effluent produced to be disposed of off site.**
 - (iii) The nitrogen content of the effluent, calculated using the above table in 2(b) (iii).**
 - (iv) The properties on which the effluent is spread, or name of the contractor removing effluent.**
- (b) By any contractor disposing of the effluent:**
- (i) The Trade name under which the contractor operates.**
 - (ii) Number of tankers operated.**
 - (iii) For each tanker, the volume of the tank and description of spreading device.**
 - (iv) The geographical area in which the contractor shall operate.**
- (4) The effluent shall not be discharged onto land within 20 metres of any water-race, river, stream, creek, lake, wetland or other surface water, or in any other place or in such a manner that effluent is likely to discharge or percolate into surface water or onto neighbouring property. Nor shall effluent be discharged onto land within 30 metres in any direction of any well used for drinking water supply.**
- (5) The effluent application rate shall not exceed 200 Kg of nitrogen per hectare per year onto grazed pasture, or an equivalent effluent application and land management system, that matches the annual nitrogen application with the annual plant uptake.**
- (6) Except for disposal by border-dyke irrigation, the depth of application shall not exceed half the capillary storage capacity or water holding capacity of the soil.**
- (7) The effluent application system shall be managed in such a way that ponding of effluent does not occur.**
- (8) All channels, sumps, tanks and ponds used to hold effluent shall be sealed to ensure no leakage or overflow of effluent.**

The Discharge of Land Drainage Water and the Discharge of Aquifer or Bore Test Water

The discharge of land drainage water, including dewatering water, into any surface water body, and the discharge of aquifer or bore test water onto the ground or into any surface water body subject to the following conditions:

- (1) This authorisation shall not apply to the drainage of wetlands, ponds or lakes.**
- (2) Any discharge made under this authorisation shall not cause erosion to the banks or bed of the receiving waterway.**

- (3) The concentration of suspended solids in the discharge shall not exceed 50 parts per million.
- (4) The temperature of the discharge shall not exceed 20°C.
- (5) The conductivity of the discharge shall not exceed 80 milli Siemens per metre (at 25°C).

Definition:

A wetland is defined as any permanently or intermittently wet area, shallow water and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.

The Discharge of Water Tracers

The discharge of water tracers into natural waters, subject to the following conditions:

- (1) This authorisation shall be limited to the following water tracers:
 - (a) The fluorescent dyes, specifically Rhodamine WT, and Fluorescein.
 - (b) Salts, specifically sodium chloride, lithium chloride and potassium chloride.
 - (c) Microorganisms and plant spores, specifically microorganisms recognised as being non-pathogenic and having no transferable antibiotic or other deleterious genes, including *Bacillus stearothermophilus*, *Bacillus subtilis v. niger*, *Escherichia coli* and bacteriophages; and Lycopodium spores.
- (2) The purpose of the discharge shall be for research or investigation into the flow characteristics of water or the dispersion characteristics of an existing or proposed effluent discharge.
- (3) The proposed research or investigation programme shall be submitted to the Manager – Regulations and Consents, Canterbury Regional Council at least ten working days before the date of the proposed discharge.

The Discharge of Cooling Water

The discharge of cooling water into surface waters or into the ground, subject to the following conditions:

- (1) The rate of discharge from any one property shall not exceed 2 litres per second.
- (2) The temperature of the discharge shall not exceed 20°C.
- (3) The discharge shall not contain any added chemicals.
- (4) Only the discharge of cooling water abstracted from groundwater shall be discharged into the ground.
- (5) Where groundwater derived cooling water is discharged into the ground it shall be discharged into the ground at the same depth (\pm 2 metres) from which it was abstracted.

Discharge of Stormwater

The following specified discharges of stormwater into natural water, subject to the specified conditions:

- (1) The discharge of roof stormwater from buildings and structures either into the ground or directly into groundwater provided it is via a sealed system that excludes all other stormwater; except in the following areas:
 - (a) that part of the Christchurch urban area where the Christchurch City Council stormwater system is available;
 - (b) that part of the Kaiapoi urban area where the Waimakariri District Council stormwater system is available.
- (2) The discharge of stormwater to surface waters, except stock water races and irrigation races, from all existing buildings, structures, hard-standing surfaces and roading.
- (3) The discharge of stormwater to surface waters, except stock water races, irrigation races and lakes, from residential or rural-residential subdivisions made after 28 September 1991, involving fewer than 30 allotments.
- (4) The discharge of stormwater from roading into the ground, outside the Christchurch City Council urban area.

CONDITIONS

The above authorisations for the discharge of stormwater are subject to the following conditions:

- (1) Where the discharge is into natural water in a territorial authority stormwater drainage system, prior written consent to discharge must be obtained from that territorial authority.
- (2) Any territorial authority making use of this general authorisation shall:
 - (a) provide the Regulations and Consents Manager, Canterbury Regional Council with a list by 1 August of each year which outlines the work undertaken in the preceding financial year under this general authorisation;
 - (b) ensure that all industrial and commercial facilities that discharge stormwater into the stormwater system under the control of the territorial authority, undertake all reasonable precautions to minimise the quantities of silt, and the risk of accidental spillages of hazardous or polluting substances, entering the stormwater system;
 - (c) when modifying or upgrading existing stormwater disposal systems, consider incorporating measures that would:
 - (i) reduce the amount of contaminants, including silt, entering natural water; and
 - (ii) reduce the risk of flooding in any surface receiving waters; and
 - (d) provide the Regulations and Consents Manager, Canterbury Regional Council, with an annual report by 1 August each year, outlining the measures taken to meet conditions 2 (b) and (c).
- (3) Any discharge made under this authorisation shall not cause erosion to the banks or bed of the receiving waterway.

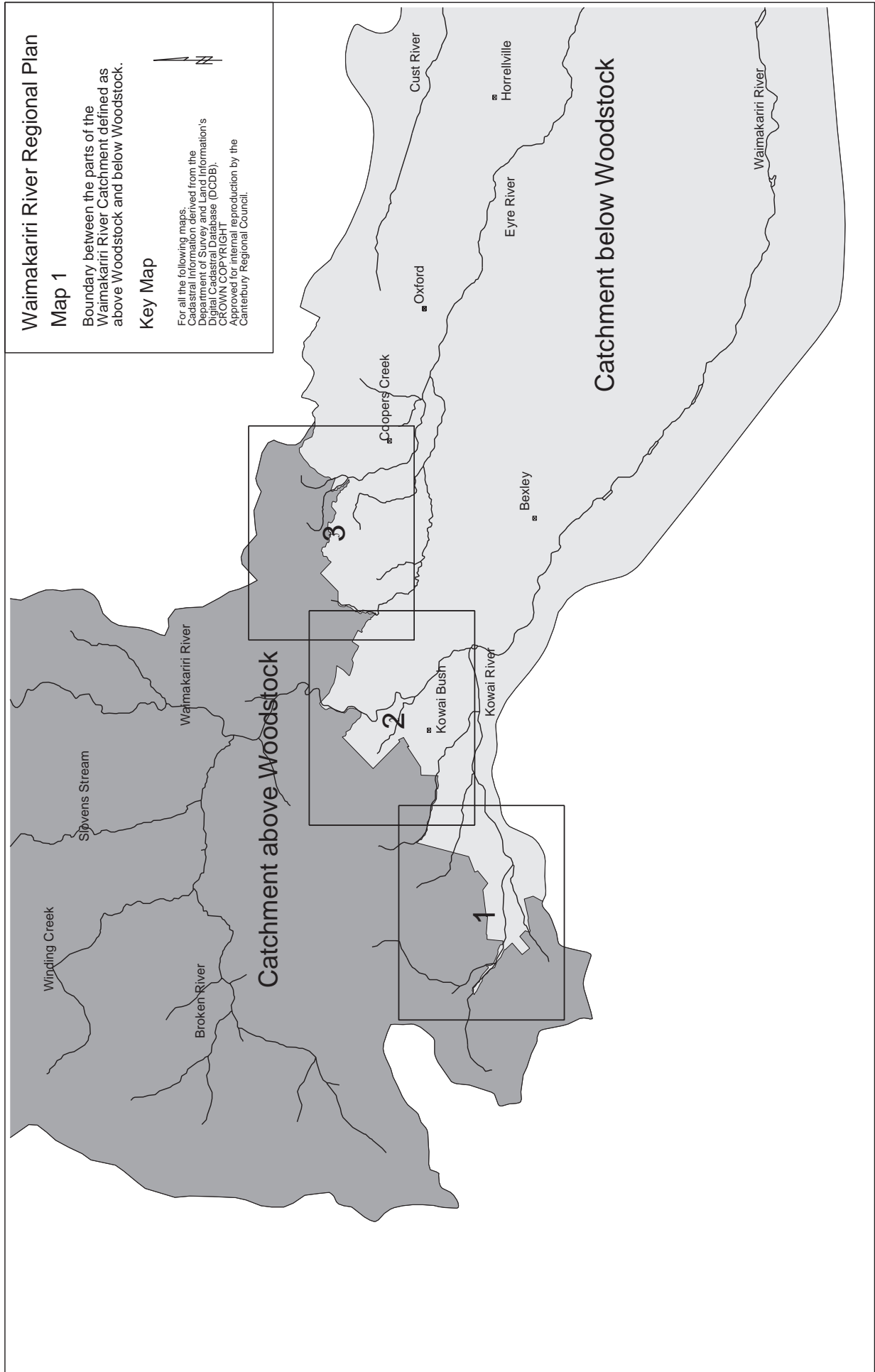
The Discharge of Swimming Pool and Swimming Pool Filter Backwash Water

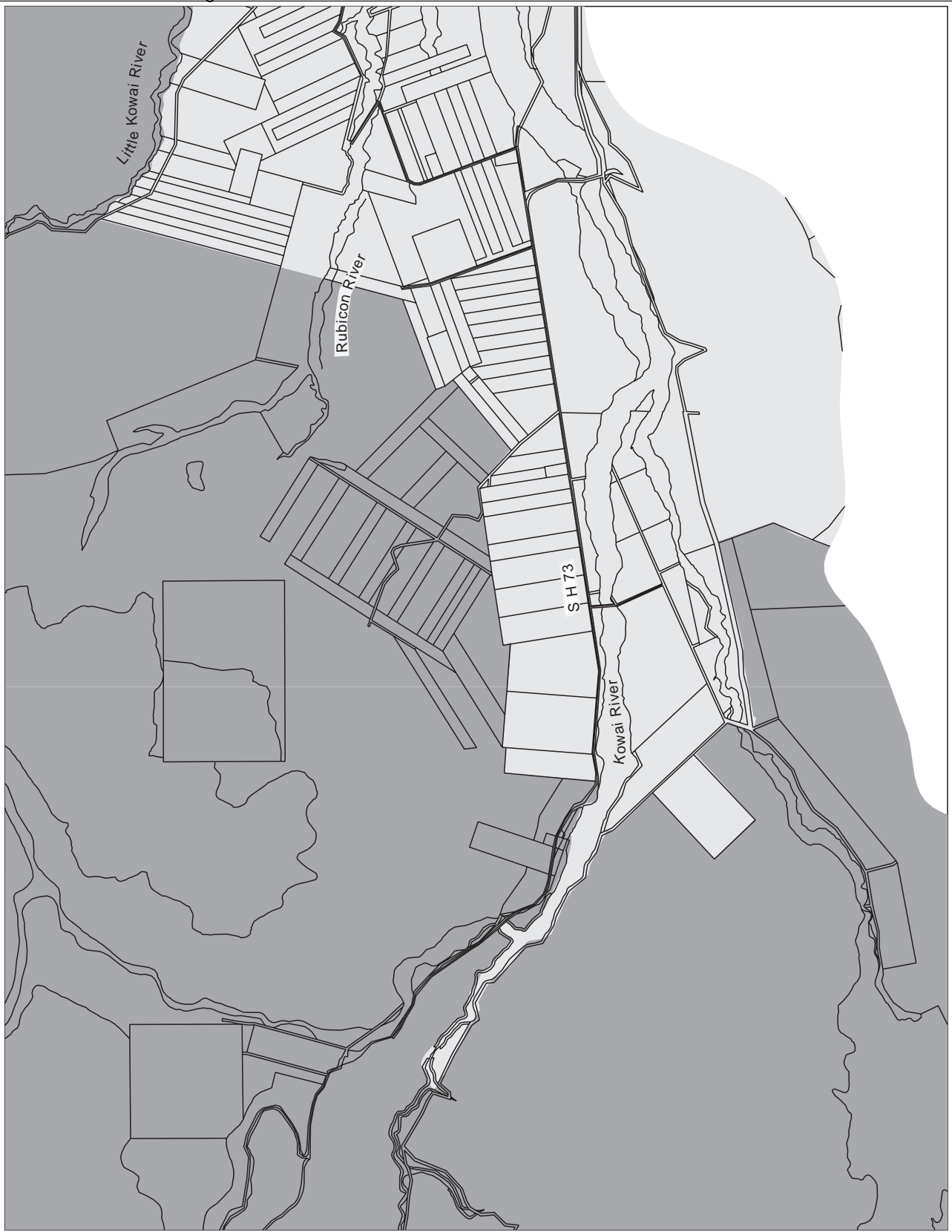
The discharge of swimming pool water into natural water, onto or into the ground, and the discharge of swimming pool filter backwash water onto or into the ground, subject to the following conditions:

- (1) For the discharge of swimming pool water;
- (a) The pool shall be left uncovered and shall not be dosed with any chemical additive for at least 14 days prior to the discharge.
 - (b) The rate of discharge shall not exceed one litre per second.
 - (c) Prior to the 14 day resting period noted in (a) above, the concentrations of the following chemicals in the pool water shall not be exceeded:

Chemical	Concentration (parts per million)
(i) Residual (free-available) chlorine	0.5
(ii) Baquacil and any other quaternary ammonium compound	50
(iii) Isocyanurates	30
 - (d) There shall be no copper sulphate or other copper salts in the discharge.
 - (e) Where the discharge is to be into a territorial authority stormwater drainage system, sewage system, stock water race, or other water race system, prior written consent shall be obtained from that territorial authority.
 - (f) Any discharge onto or into the ground shall occur in such a manner to ensure that it does not discharge onto any neighbouring property.
- (2) For the discharge of swimming pool filter backwash water onto or into the ground:
- (a) The discharge shall be at least 20m from any surface water body or drinking-water supply bore, and shall not be in such a place or manner that it is likely to enter any surface water.
 - (b) The discharge shall occur in such a manner to ensure that it does not discharge onto any neighbouring property.

**Map 1 Boundary between the
parts of the
Waimakariri River
Catchment defined as
above Woodstock and
below Woodstock**





Waimakariri River
Regional Plan

Map 1 Sheet 1

Boundary between the parts of the Waimakariri River Catchment defined as above Woodstock and Below Woodstock.

 Catchment above Woodstock

 Catchment below Woodstock



0 0.20 .40 .60 .8 1km



Scale 1:50000



Waimakariri River
Regional Plan

Map 1 Sheet 2

Boundary between the parts of the Waimakariri River Catchment defined as above Woodstock and Below Woodstock.

-  Catchment above Woodstock
-  Catchment below Woodstock



0 0.20.40.60.8 1km
Scale 1:50000



Waimakariri River
Regional Plan

Map 1 Sheet 3

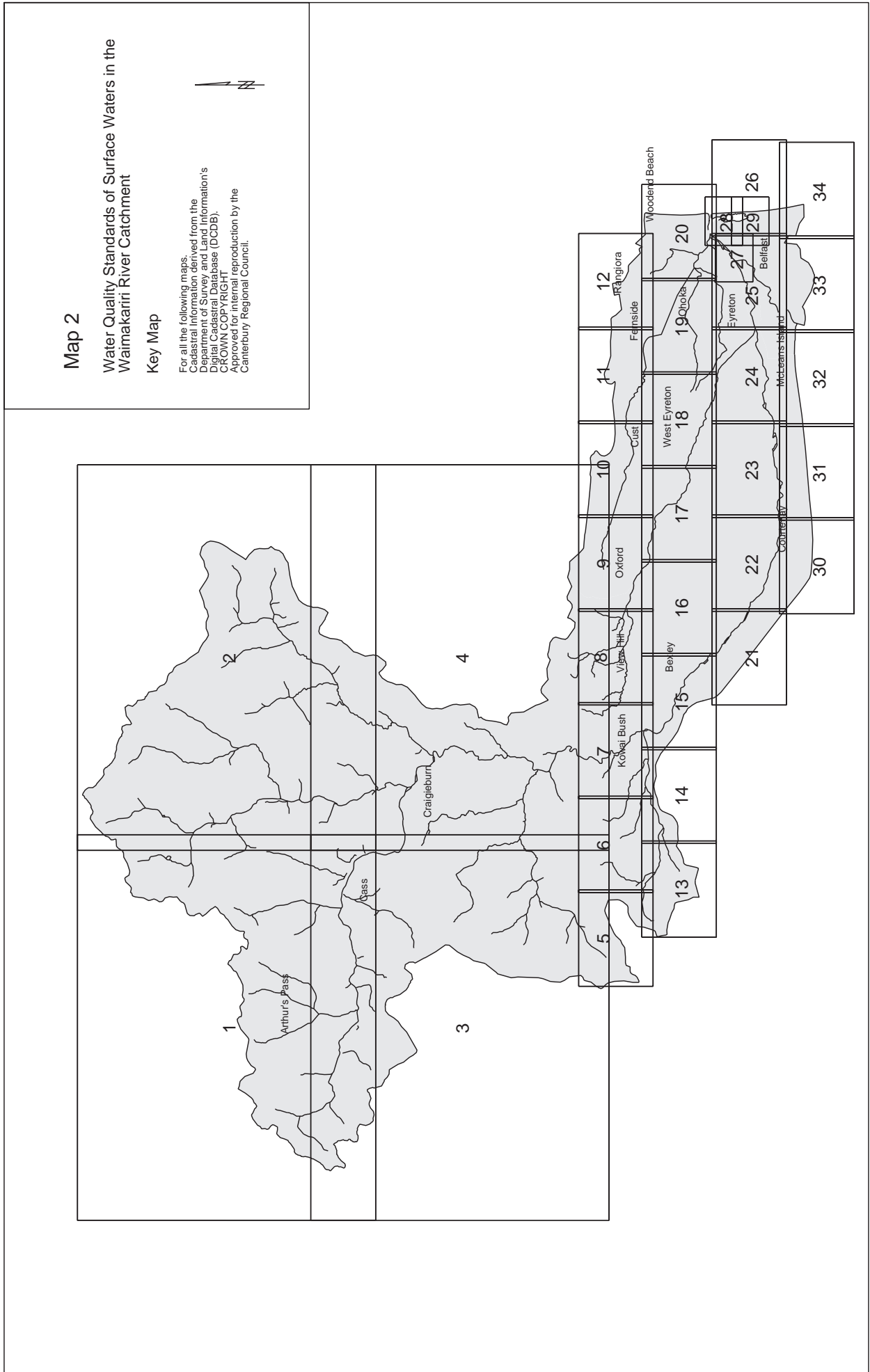
Boundary between the parts of the
Waimakariri River Catchment defined
as above Woodstock and Below
Woodstock.

-  Catchment above
Woodstock
-  Catchment below
Woodstock



0 0.20 .40 .60 .8 1km
Scale 1:50000

**Map 2 Water quality
standards of surface
waters in the
Waimakariri River
Catchment**





Waimakariri River Regional Plan

Map 2 Sheet 1

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

Class NS
- Natural State

Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural

Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic

Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic



0 1 2 3 4 5km



Scale 1:200000





**Waimakariri River
Regional Plan**

Map 2 Sheet 2

Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment

 Class NS
- Natural State

 Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural

 Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic

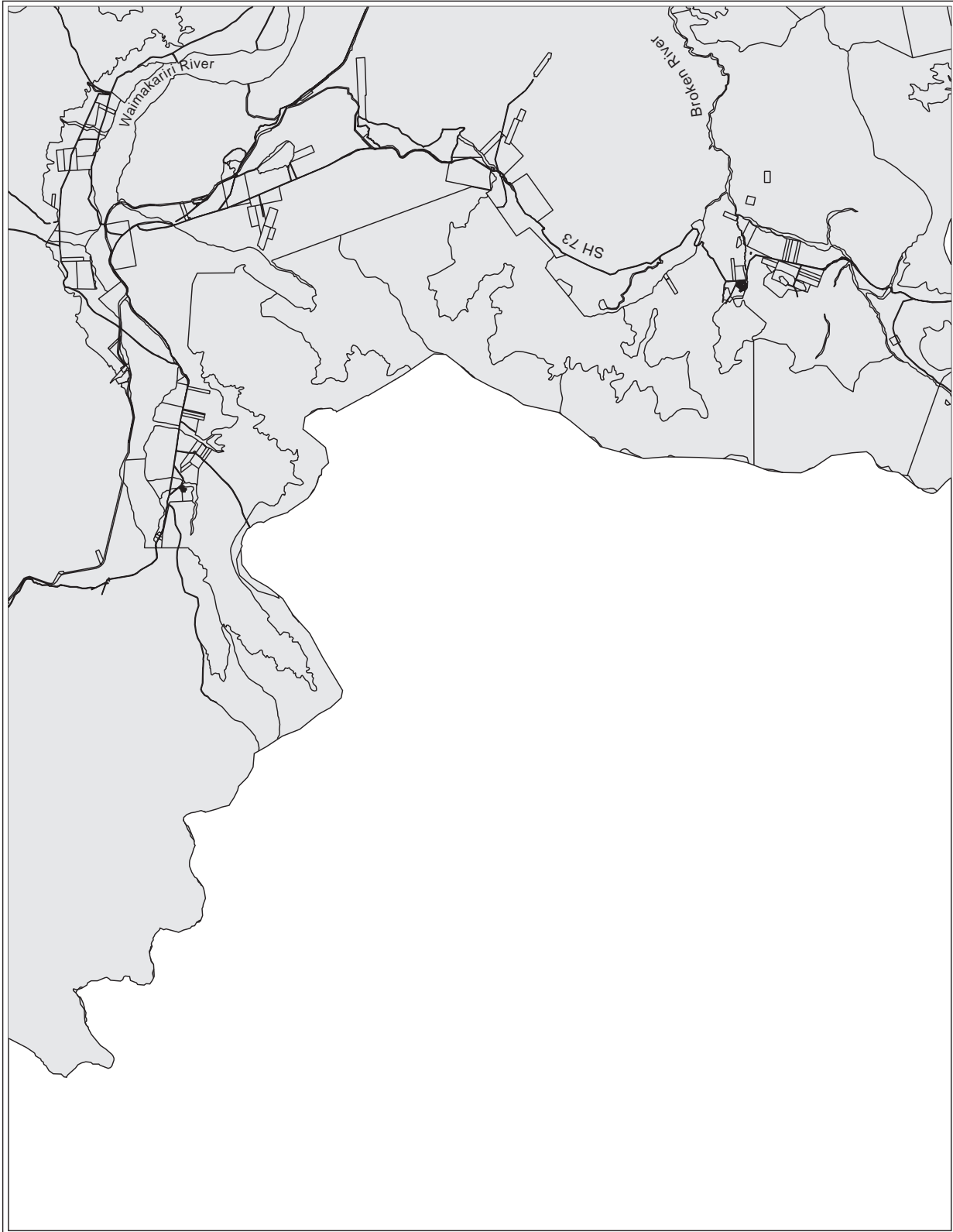
 Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic



0 1 2 3 4 5km







Scale 1:200000

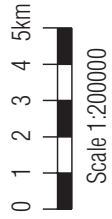
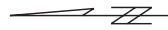


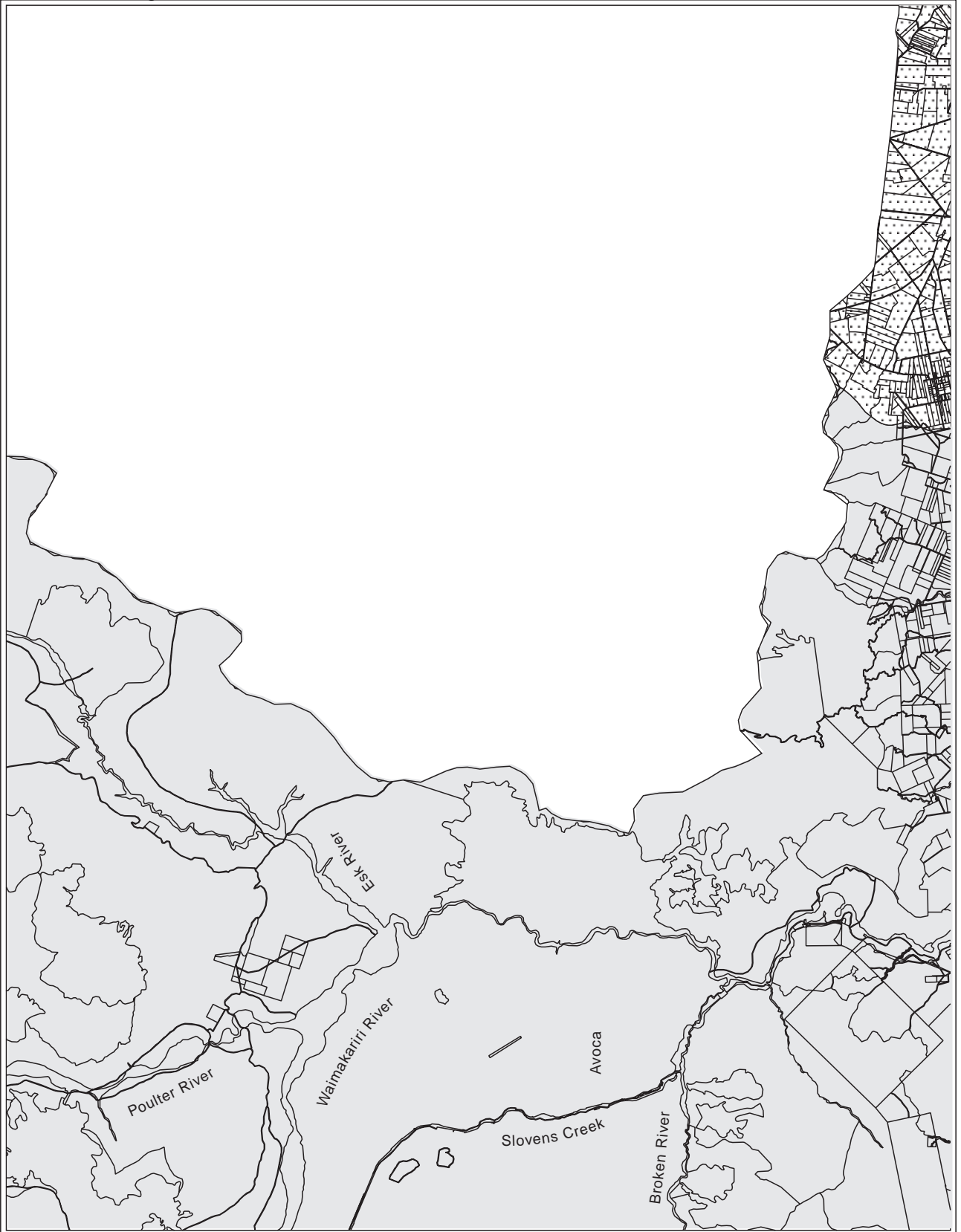
Waimakariri River Regional Plan

Map 2 Sheet 3

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | | | |
|--|--|---|---|
|  <p>Class NS
- Natural State</p> |  <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |  <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |  <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |
|--|--|---|---|









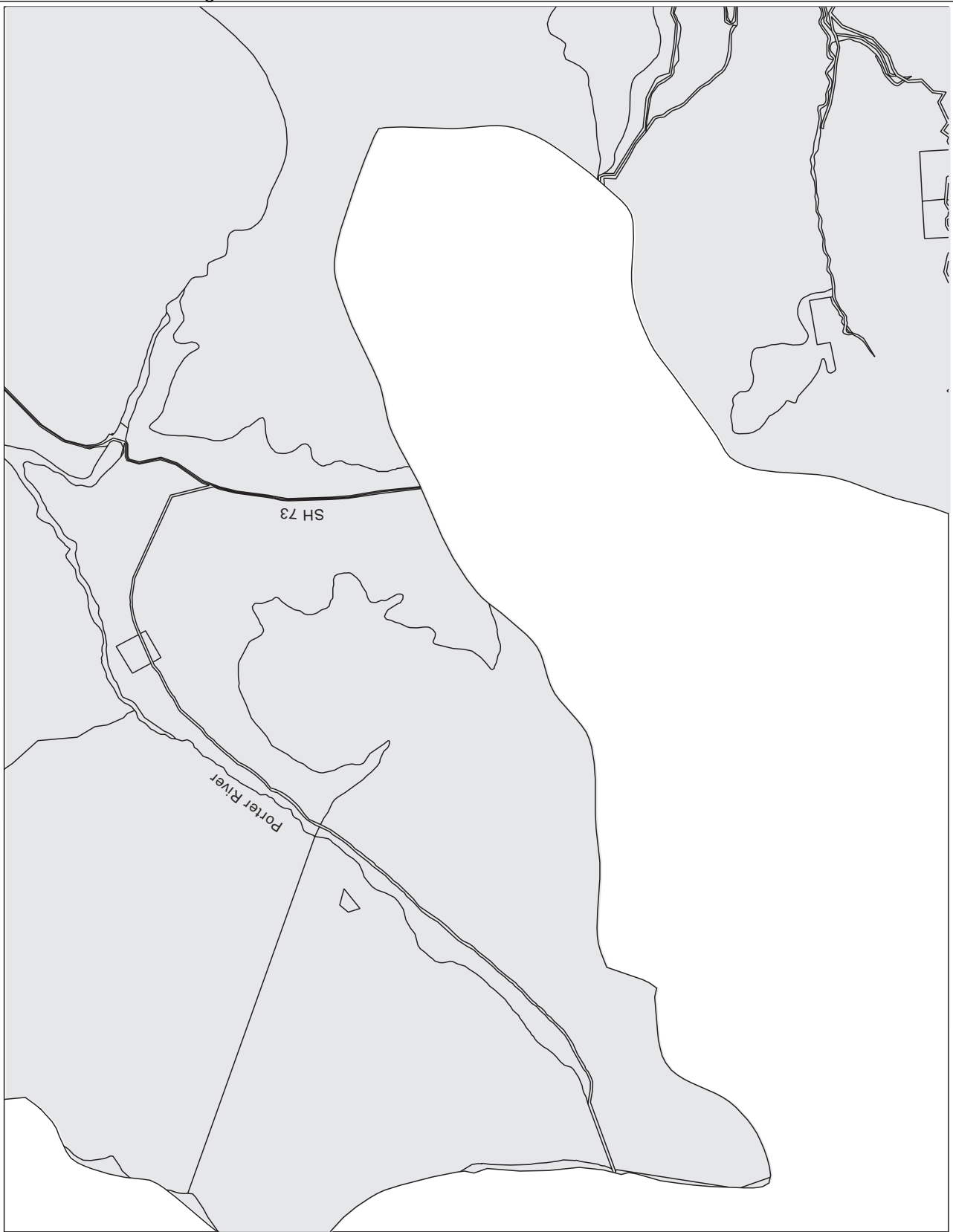
Waimakariri River Regional Plan

Map 2 Sheet 4

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |









Waimakariri River
Regional Plan

Map 2 Sheet 5

Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment

- | | |
|---|---|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |



0 0.20 .40 .60 .8 1 km







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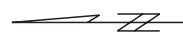


**Waimakariri River
Regional Plan**

Map 2 Sheet 6

**Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment**

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |







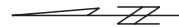


Waimakariri River Regional Plan

Map 2 Sheet 7

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | | | |
|--|--|---|---|
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- Natural State</p> |  <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |  <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |  <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |
|--|--|---|---|



0 0.20 .40 .60 .8 1km







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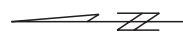


**Waimakariri River
Regional Plan**

Map 2 Sheet 8

**Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment**

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |









Waimakariri River Regional Plan

Map 2 Sheet 9

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

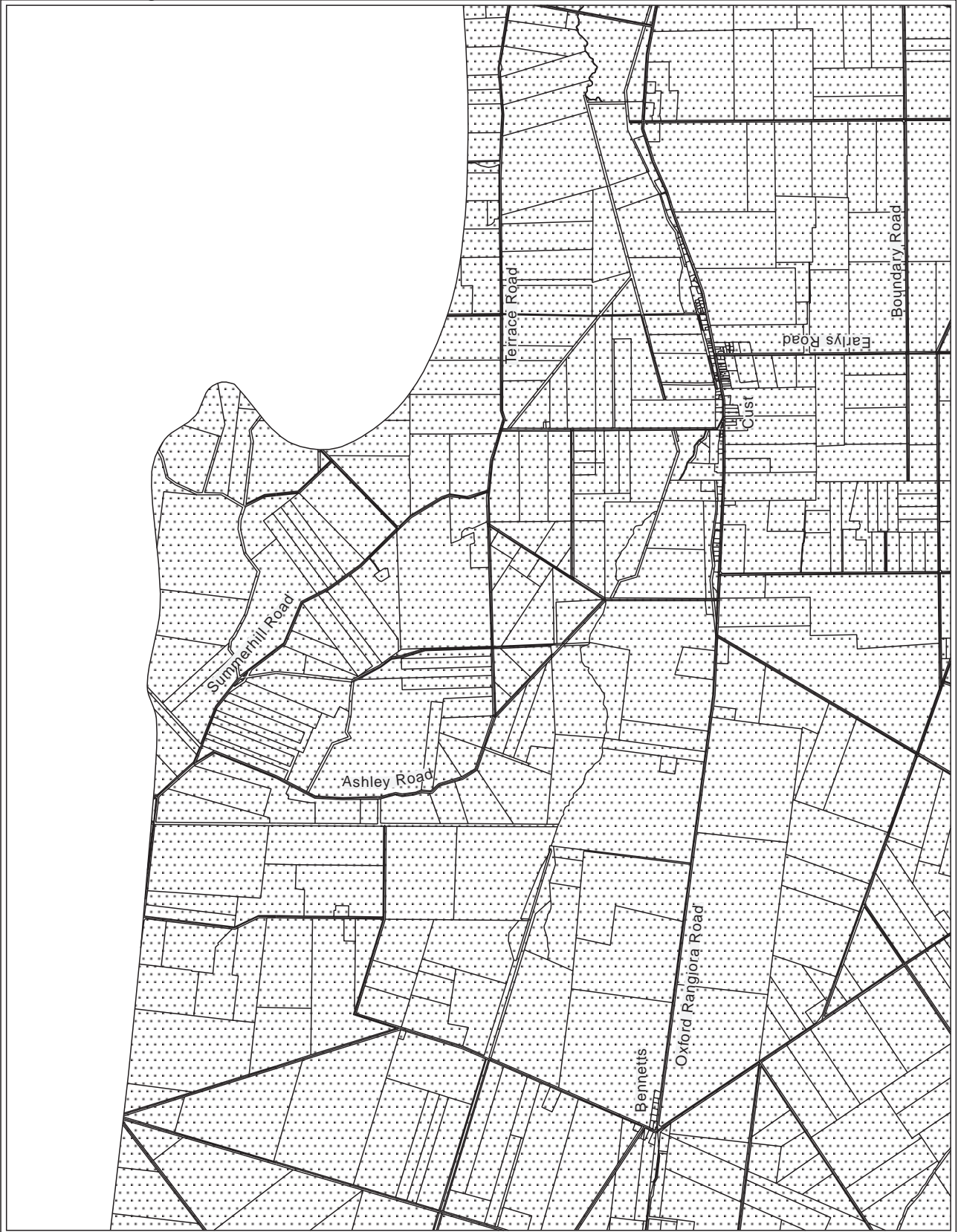
- 
Class NS
 - Natural State
- 
Class WAIM
 - Drinking Water for Animals
 - Contact Recreation
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
 - Cultural
- 
Class WAIM-TRIB
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
- 
Class OTU/GROYNES
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Public Health
 - Aesthetic



0 0.20 .40 .60 .8 1 km







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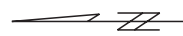


Waimakariri River Regional Plan

Map 2 Sheet 10

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | | | |
|--|--|---|---|
| 
Class NS
- Natural State | 
Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural | 
Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic | 
Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |
|--|--|---|---|








Waimakariri River Regional Plan


Map 2 Sheet 11

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- 

Class NS
- Natural State
- 

Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural
- 

Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- 

Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic



0 0.20 0.40 0.60 0.8 1 km







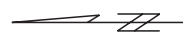
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Waimakariri River
Regional Plan

Map 2 Sheet 12

Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment

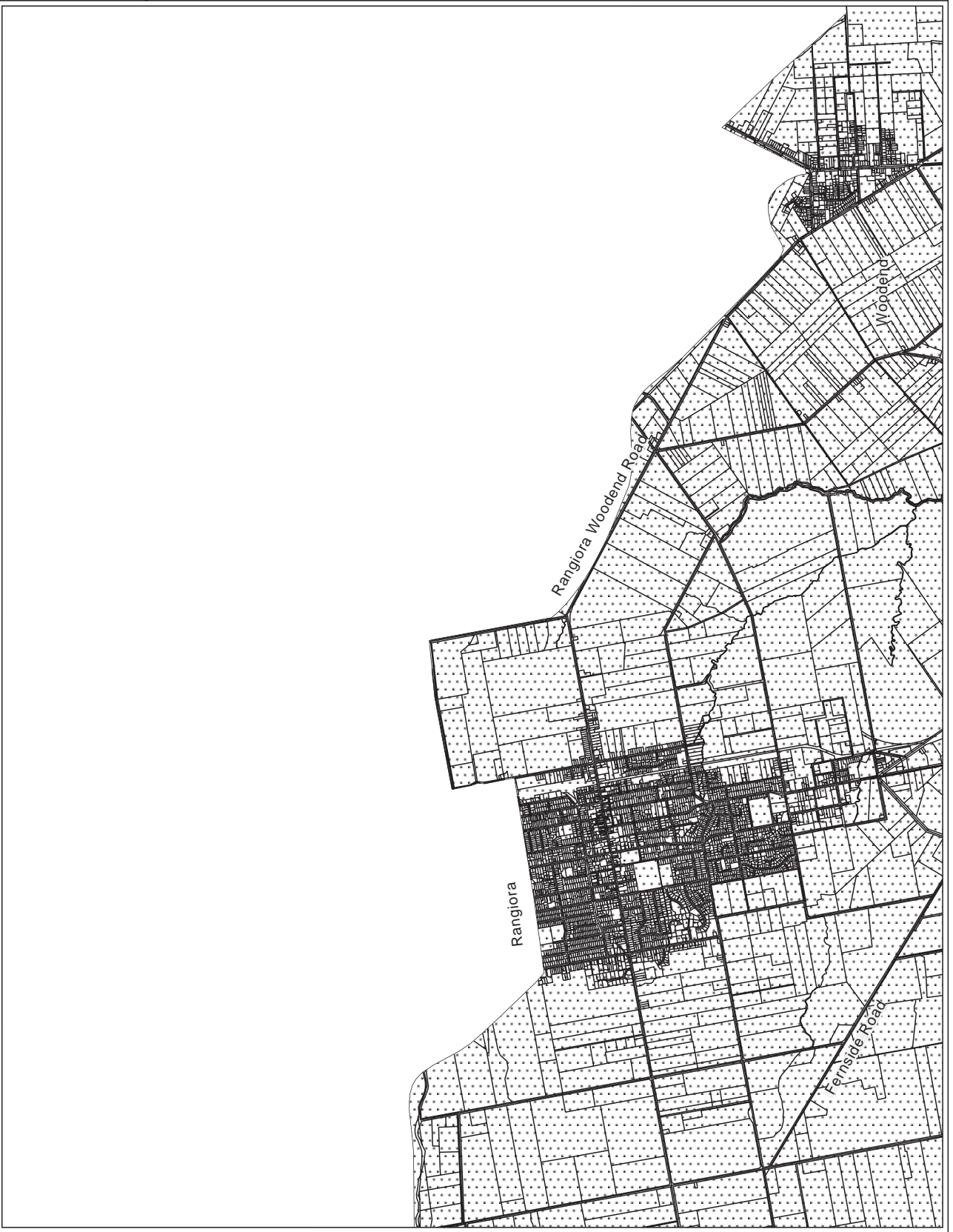
- | | |
|--|---|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |



0 0.20 .40 .60 .8 1km



Scale 1:50000







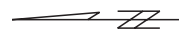


Waimakariri River Regional Plan

Map 2 Sheet 13

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

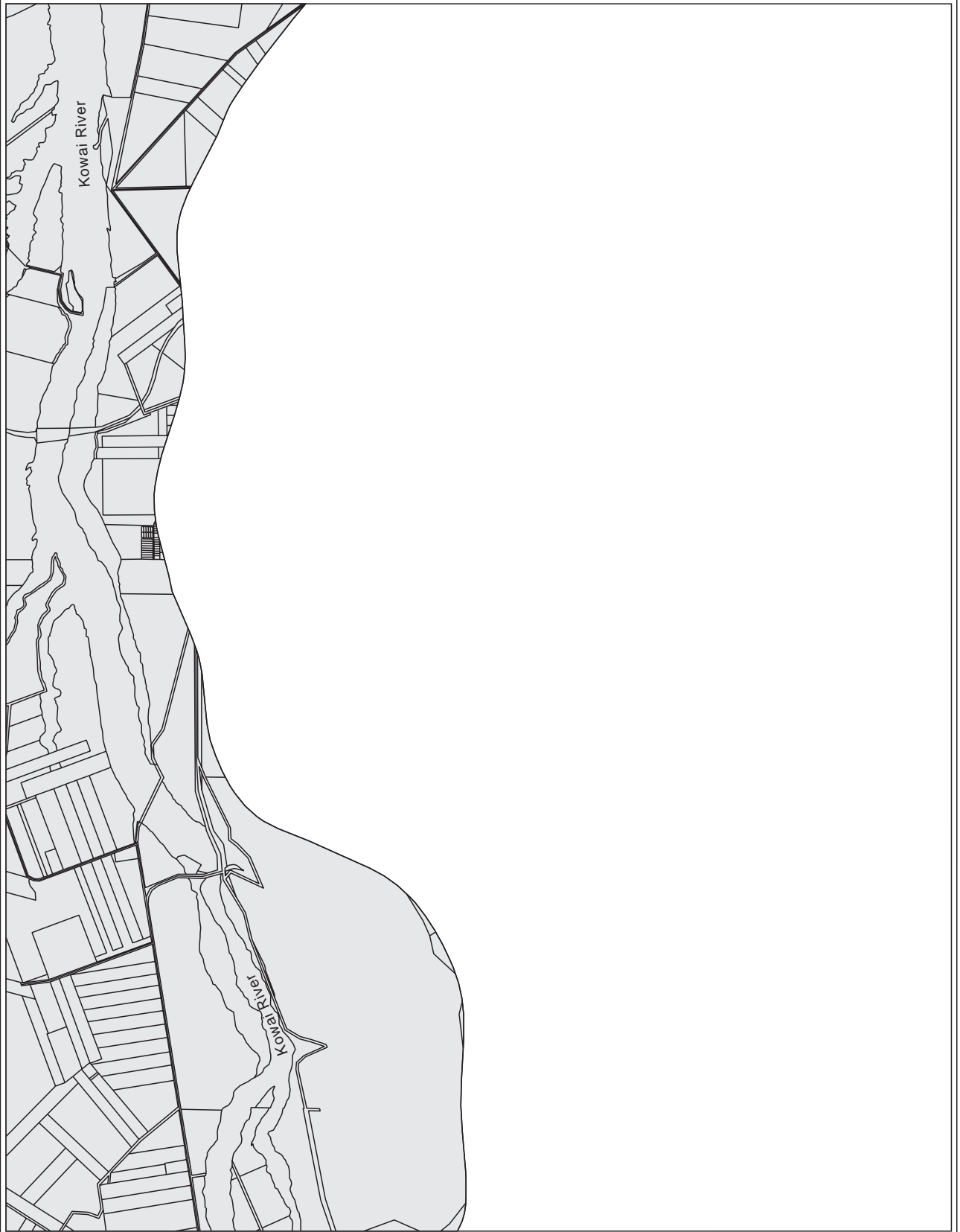
- 
Class NS
 - Natural State
- 
Class WAIM
 - Drinking Water for Animals
 - Contact Recreation
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
 - Cultural
- 
Class WAIM-TRIB
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
- 
Class OTU/GROYNES
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Public Health
 - Aesthetic



0 0.20.40.60.8 1km







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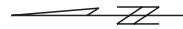


**Waimakariri River
Regional Plan**

Map 2 Sheet 14

**Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment**

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |



0 0.20.40.60.8 1km







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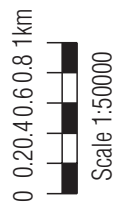
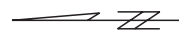


Waimakariri River Regional Plan

Map 2 Sheet 15

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | | | |
|---|---|--|---|
| 
Class NS
- Natural State | 
Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural | 
Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic | 
Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |
|---|---|--|---|







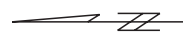


Waimakariri River Regional Plan

Map 2 Sheet 16

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- 
Class NS
 - Natural State
- 
Class WAIM
 - Drinking Water for Animals
 - Contact Recreation
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
 - Cultural
- 
Class WAIM-TRIB
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
- 
Class OTU/GROYNES
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Public Health
 - Aesthetic







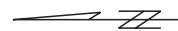


Waimakariri River Regional Plan

Map 2 Sheet 17

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | |
|---|--|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |



0 0.20.40.60.8 1km







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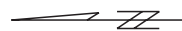


Waimakariri River Regional Plan

Map 2 Sheet 18

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

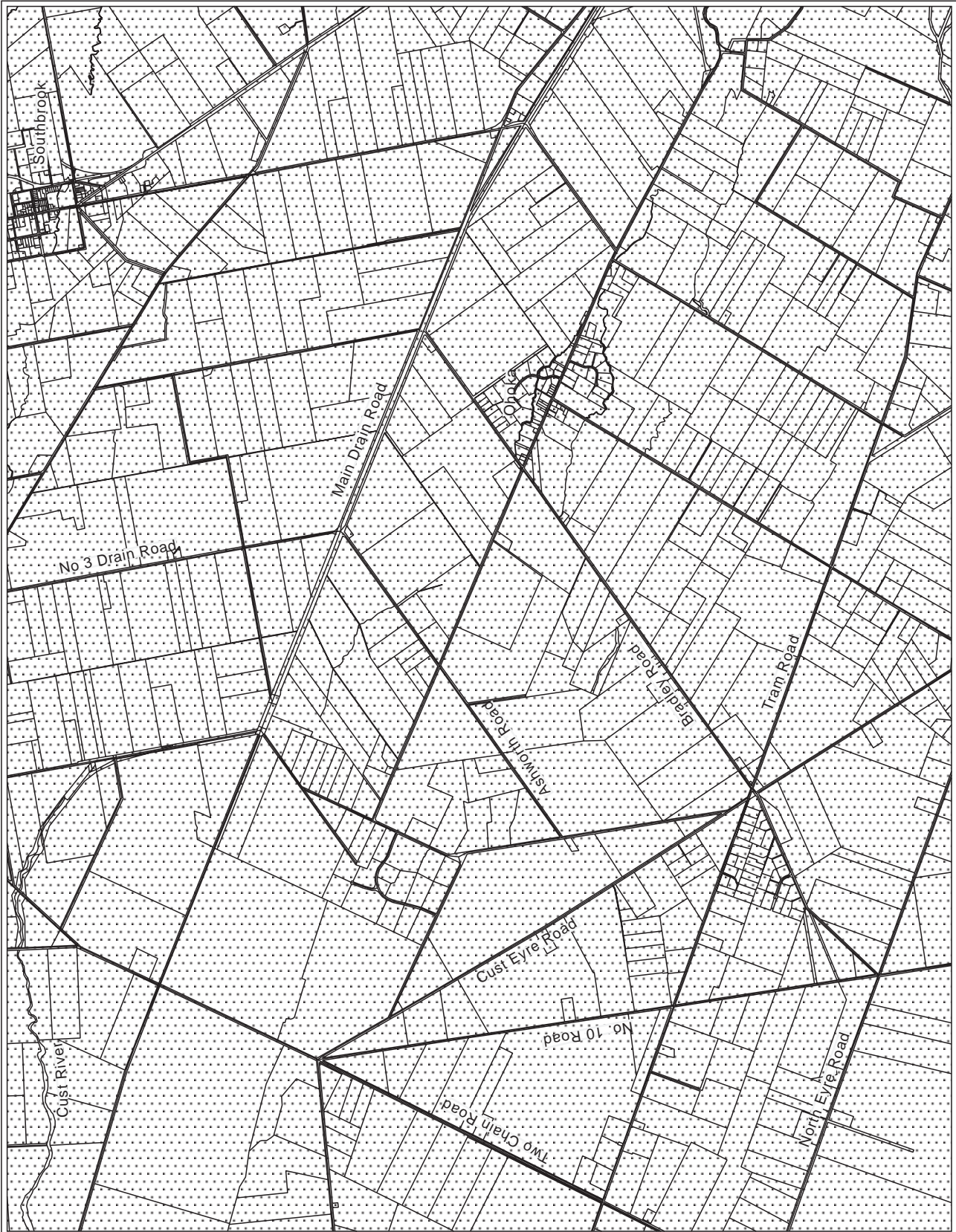
- | | |
|--|---|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |



0 0.20.40.60.8 1km







Scale 1:50000



Waimakariri River Regional Plan

Map 2 Sheet 19

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

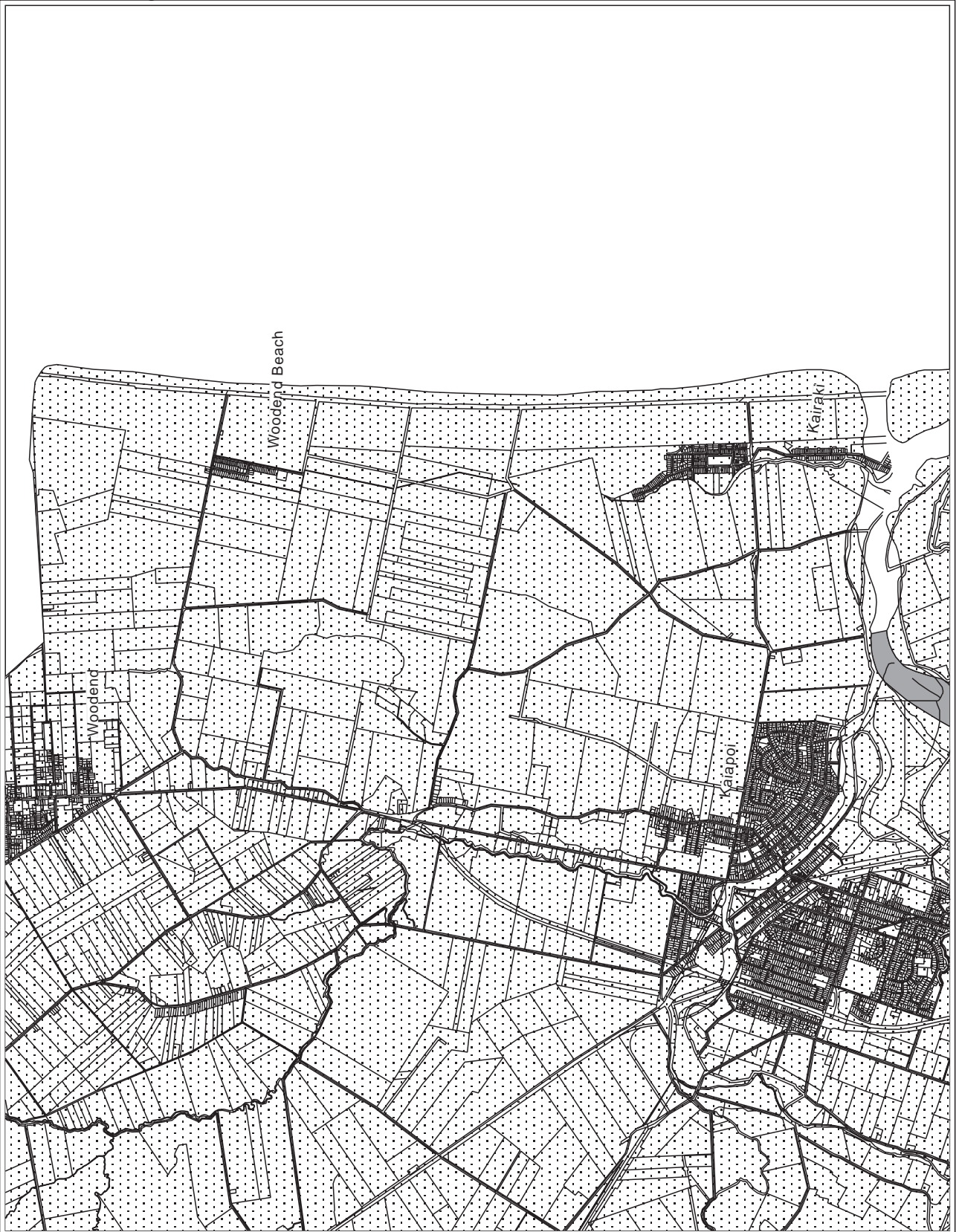
- | | | | |
|---|---|--|---|
| 
Class NS
- Natural State | 
Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural | 
Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic | 
Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |
|---|---|--|---|



0 0.20.40.60.8 1km







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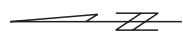


**Waimakariri River
Regional Plan**

Map 2 Sheet 20

**Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment**

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |



0 0.20.4.0.6.0.8 1km







Scale 1:50000



Waimakariri River Regional Plan

Map 2 Sheet 21

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | | | |
|--|--|---|---|
|  <p>Class NS
- Natural State</p> |  <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |  <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |  <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |
|--|--|---|---|



0 0.20.40.60.8 1km







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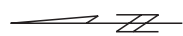


Waimakariri River Regional Plan

Map 2 Sheet 22

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | |
|--|--|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |









Waimakariri River Regional Plan

Map 2 Sheet 23

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | | | |
|---|---|--|--|
|  <p>Class NS
- Natural State</p> |  <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |  <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |  <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |
|---|---|--|--|



0 0.20.40.60.8 1km







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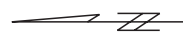


Waimakariri River Regional Plan

Map 2 Sheet 24

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |







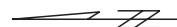


Waimakariri River
Regional Plan

Map 2 Sheet 25

Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment

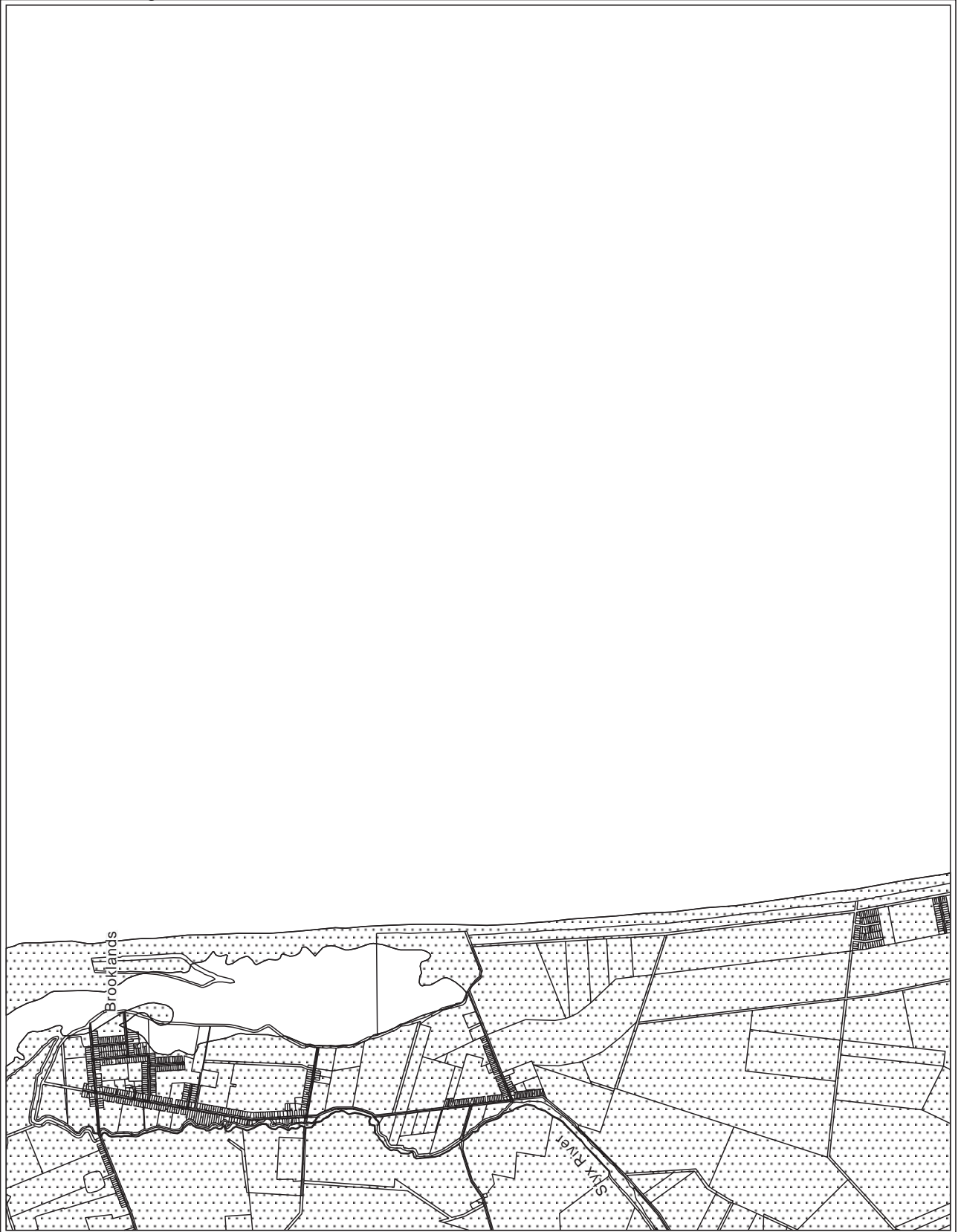
- | | | | |
|--|--|---|--|
| 
Class NS
- Natural State | 
Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural | 
Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic | 
Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |
|--|--|---|--|



0 0.20.40.60.8 1km







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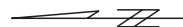


Waimakariri River
Regional Plan

Map 2 Sheet 26

Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment

- | | |
|--|---|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |



0 0.20 .40 .60 .8 1 km







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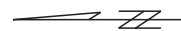


Waimakariri River Regional Plan

Map 2 Sheet 27

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

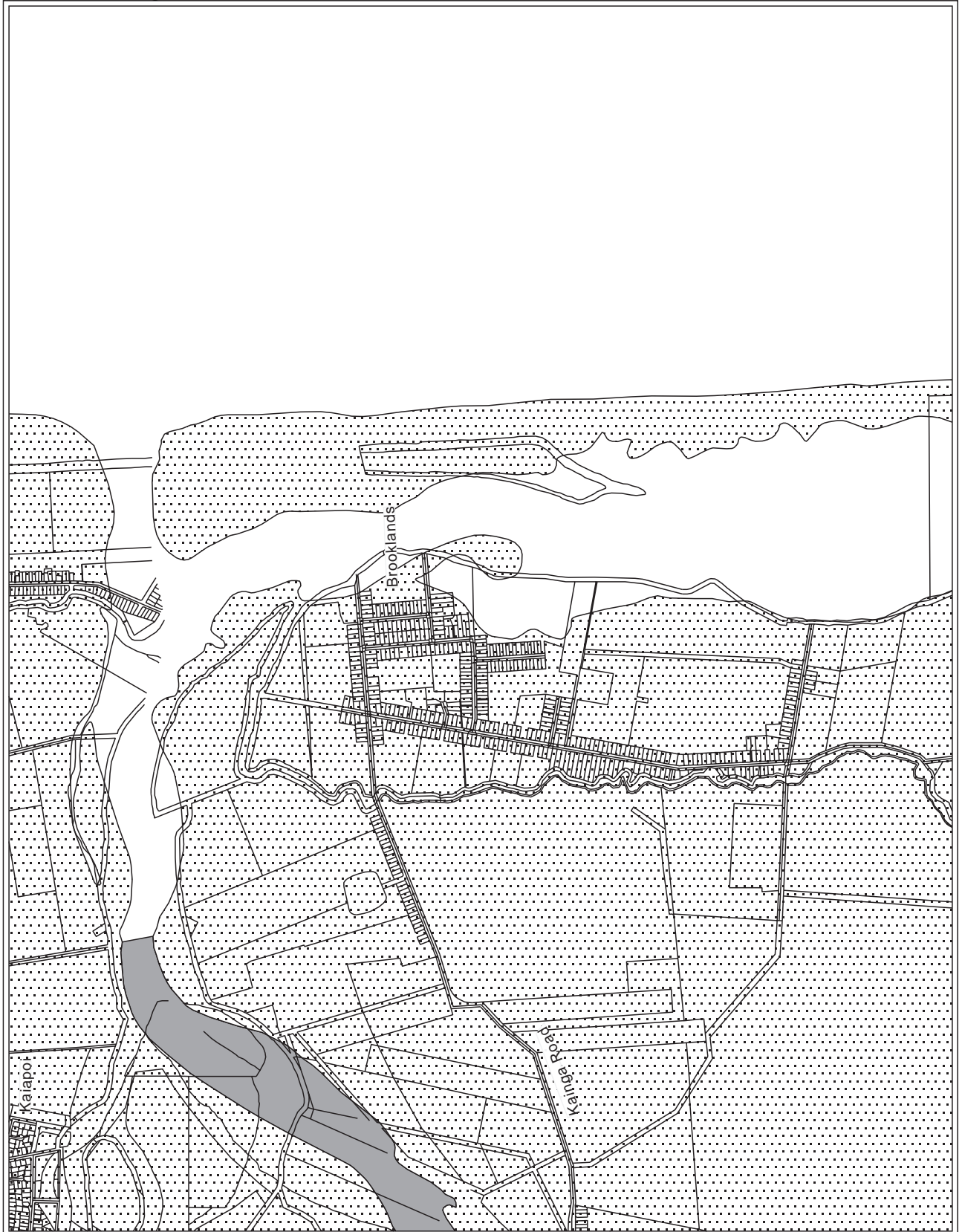
- | | | | |
|---|---|--|---|
| 
Class NS
- Natural State | 
Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural | 
Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic | 
Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |
|---|---|--|---|



0 1000 0300 0500m







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**Waimakariri River
Regional Plan**

Map 2 Sheet 28

**Water Quality Standards of
Surface Waters in the
Waimakariri River Catchment**

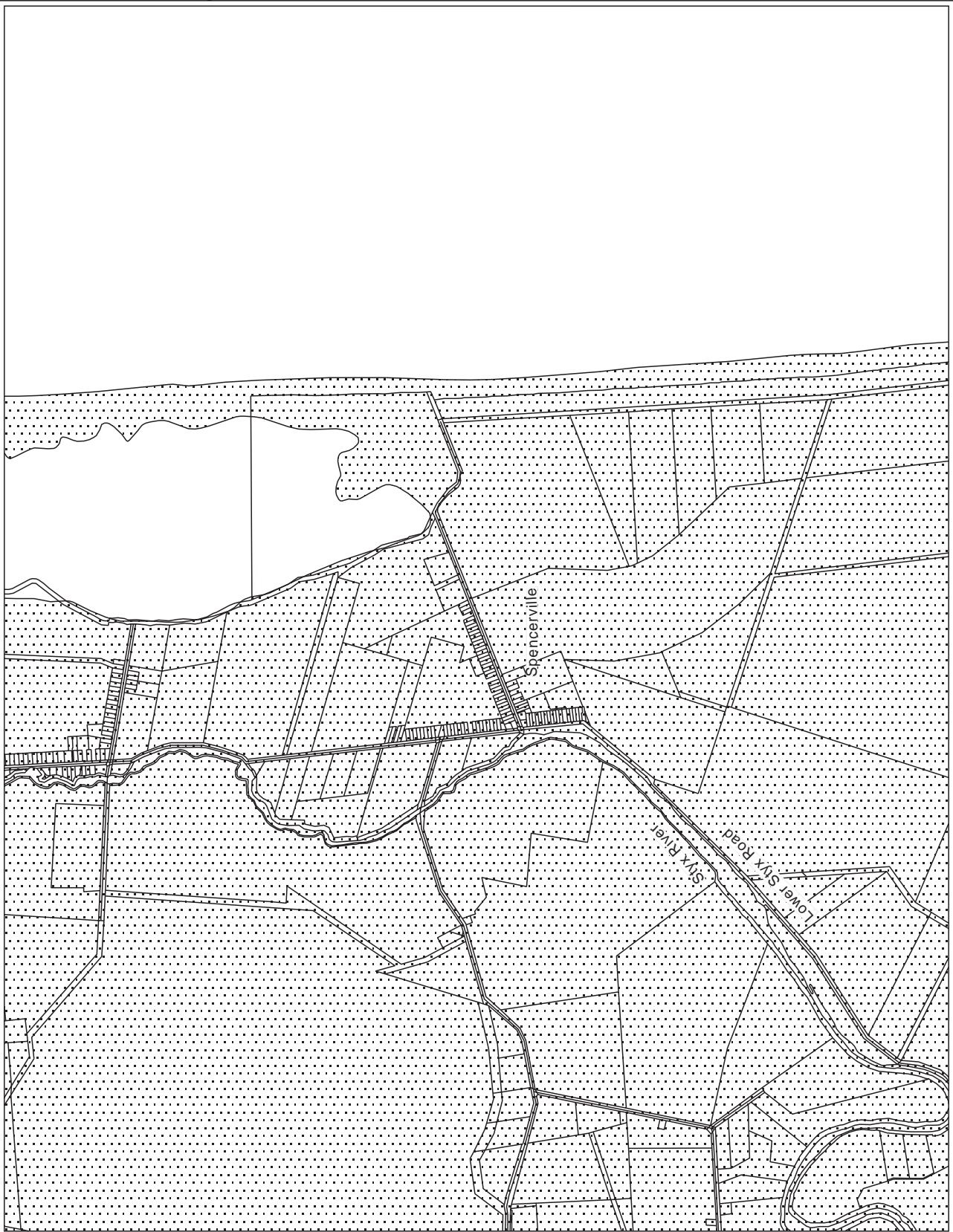
- | | |
|--|--|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |



0 100 200 300 400 500m







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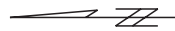


Waimakariri River Regional Plan

Map 2 Sheet 29

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- 
Class NS
 - Natural State
- 
Class WAIM
 - Drinking Water for Animals
 - Contact Recreation
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
 - Cultural
- 
Class WAIM-TRIB
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
- 
Class OTU/GROYNES
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Public Health
 - Aesthetic



0 100 200 300 400 500m







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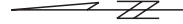


Waimakariri River Regional Plan

Map 2 Sheet 30

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | |
|--|--|
|  | Class NS
- Natural State |
|  | Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural |
|  | Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic |
|  | Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic |







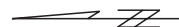


Waimakariri River Regional Plan

Map 2 Sheet 31

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

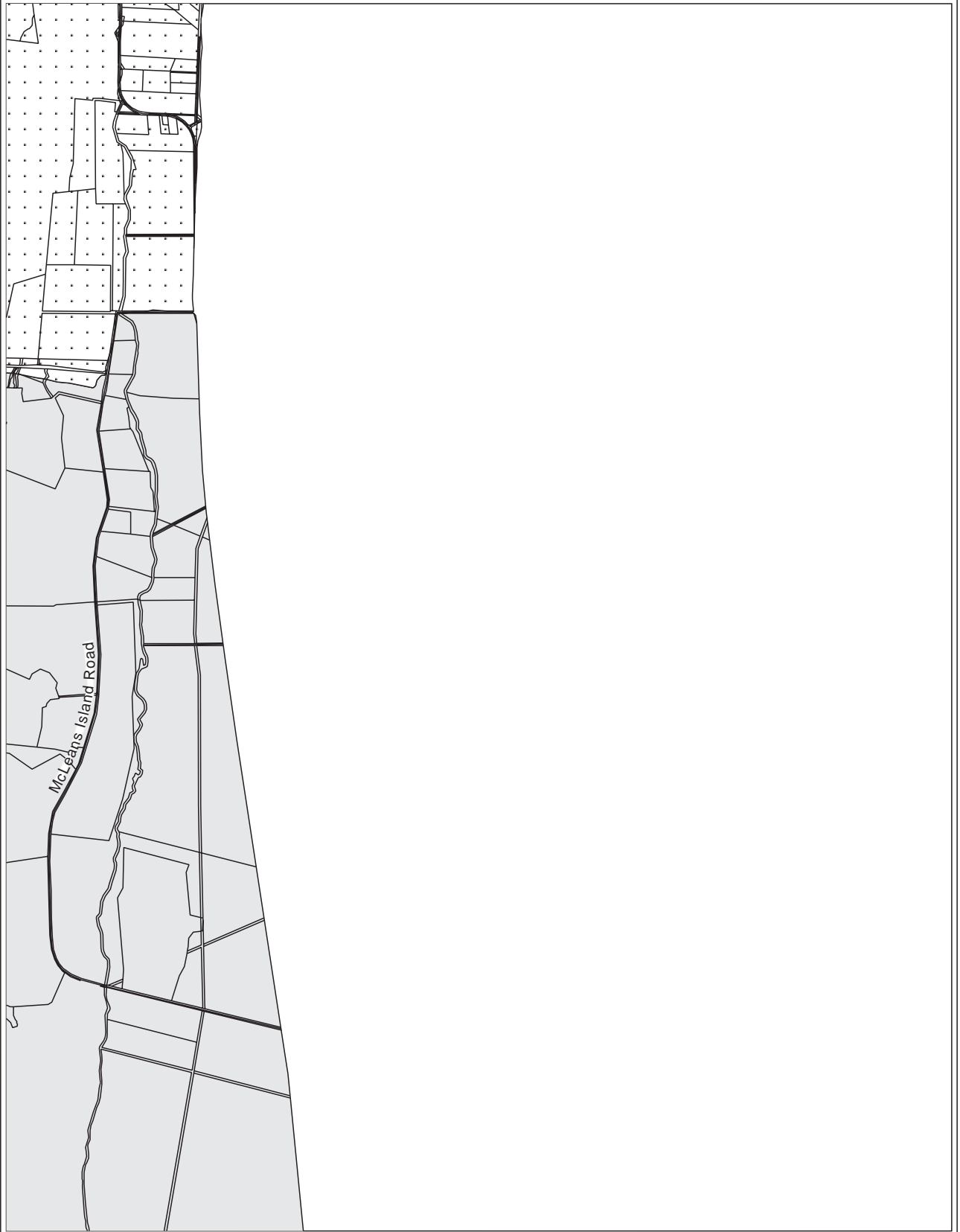
- 
Class NS
 - Natural State
- 
Class WAIM
 - Drinking Water for Animals
 - Contact Recreation
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
 - Cultural
- 
Class WAIM-TRIB
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
- 
Class OTU/GROYNES
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Public Health
 - Aesthetic



0 0.20.40.60.8 1km







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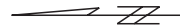


Waimakariri River Regional Plan

Map 2 Sheet 32

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- 
Class NS
 - Natural State
- 
Class WAIM
 - Drinking Water for Animals
 - Contact Recreation
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
 - Cultural
- 
Class WAIM-TRIB
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Aesthetic
- 
Class OTU/GROYNES
 - Drinking Water for Animals
 - Fisheries
 - Fish Spawning
 - Aquatic Ecosystems
 - Public Health
 - Aesthetic



0 0.20.40.60.8 1km




Scale 1:50000





Waimakariri River Regional Plan


Map 2 Sheet 33

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

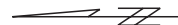
- 

Class NS
- Natural State
- 

Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural
- 

Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- 

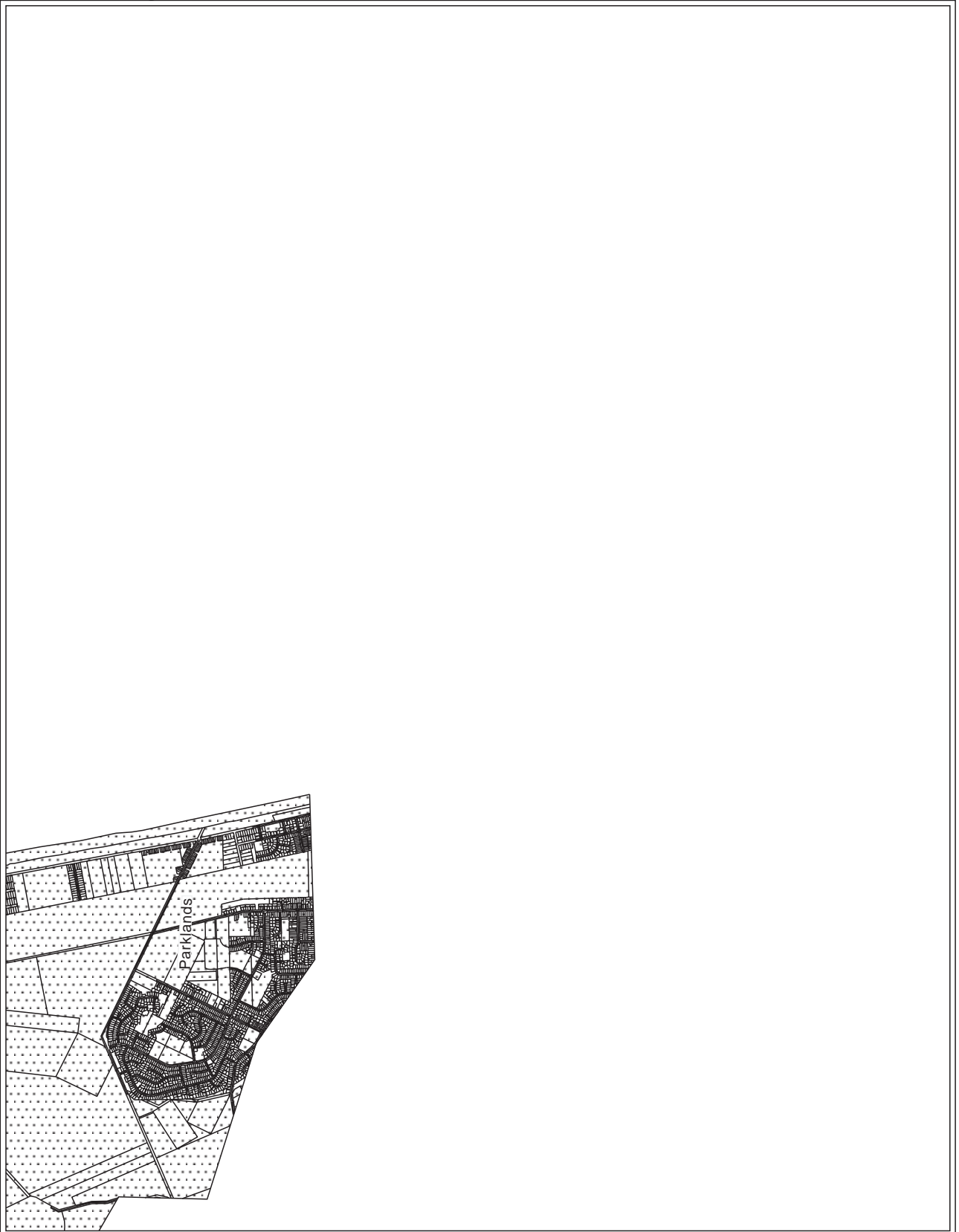
Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic



0 0.20.4.0.6.0.8 1km







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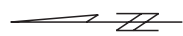


Waimakariri River Regional Plan

Map 2 Sheet 34

Water Quality Standards of Surface Waters in the Waimakariri River Catchment

- | | |
|--|--|
|  | <p>Class NS
- Natural State</p> |
|  | <p>Class WAIM
- Drinking Water for Animals
- Contact Recreation
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic
- Cultural</p> |
|  | <p>Class WAIM-TRIB
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Aesthetic</p> |
|  | <p>Class OTU/GROYNES
- Drinking Water for Animals
- Fisheries
- Fish Spawning
- Aquatic Ecosystems
- Public Health
- Aesthetic</p> |



0 0.20.40.60.8 1km



Scale 1:50000