

Waimakariri District - Rural Character Assessment

Rural Zone – Character Assessment Report
Prepared for Waimakariri District Council

6 June 2018



Boffa Miskell

Document Quality Assurance

<p>Bibliographic reference for citation: Boffa Miskell 2018. <i>Waimakariri District - Rural Character Assessment: Rural Zone – Character Assessment Report</i>. Report prepared by Boffa Miskell for Waimakariri District Council.</p>		
Prepared by:	Bron Faulkner Senior Principal/Landscape Architect Boffa Miskell Ltd	
	Sue McManaway Landscape Architect Beca	
Reviewed by:	Yvonne Pfluger Senior Principal/Landscape Planner Boffa Miskell Ltd	
	Stephanie Styles Principal/Senior Planner Boffa Miskell Ltd	
Status: FINAL	Revision / version: 2	Issue date: 6 June 2018
<p>Use and Reliance This report has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Boffa Miskell does not accept any liability or responsibility in relation to the use of this report contrary to the above, or to any person other than the Client. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.</p>		

File ref: C17060A_002_Waimakariri_Rural_Character_assmnt_Final_20180606.docx

Cover photograph: Rural mail boxes, View Hill

CONTENTS

1.0	Introduction & Background	1
1.1	Scope	1
1.2	Study Approach	1
1.3	Rural Character in the Waimakariri District	2
1.4	Determining Areas Capable of and Suitable for Rural Residential / Intensified Rural Development	3
2.0	Rural Character Assessment	6
2.1	Coastal Plains	7
2.2	Lower Plains	10
2.3	Waimakariri River Plains	14
2.4	Waimakariri River	17
2.5	View Hill - Eyrewell Plains	20
2.6	Okuku-Ashley Plains	23
2.7	Oxford Downlands	27
2.8	Mt Thomas Downlands	30
2.9	Loburn-Sefton Downlands	32
2.10	Summerhill Downlands	35
2.11	Lees Valley Basin	38
2.12	Oxford - Puketeraki Hill Country	40
3.0	Conclusions	42
	Bibliography & References	45

Appendices

Appendix 1: Land Type Descriptions

Appendix 2: GIS Base Data

FIGURES

Figure 1: Greater Christchurch Boundary in Waimakariri District

Figure 2: Rural Character Areas

Figure 3: Rural Character areas and WDC Land Parcel Size Analysis

Rural Character Area Maps

- Figure 4:** Coastal Plains
- Figure 5:** Lower Plains
- Figure 6:** Waimakariri River Plains
- Figure 7:** Waimakariri River
- Figure 8:** View Hill - Eyrewell Plains
- Figure 9:** Okuku-Ashley Plains
- Figure 10:** Oxford Downlands
- Figure 11:** Mt Thomas Downlands
- Figure 12:** Loburn - Sefton Downlands
- Figure 13:** Summer Hill Downlands
- Figure 14:** Lees Valley Basin
- Figure 15:** Oxford - Puketeraki Hill Country

1.0 Introduction & Background

Waimakariri District Council (WDC) has engaged Boffa Miskell Ltd (with assistance from Beca) to undertake an assessment of the rural character of the rural zone to support its review of the operative District Plan which includes a review of the zoning and associated provisions for the rural area of the District. The assessment will inform the management of activities and effects within and around the Rural Zone, including the relationship with rural residential activities and existing small-lot rural development.

The District's rural environment contains a range of landscapes and land uses including extensive and intensive farming, lifestyle farming, rural residential, settlements, forestry, non-primary production businesses and natural areas.

Feedback from the community has indicated that some activities and forms of development occurring in the rural zone are not considered to be compatible with adjacent land uses. (e.g. manufacturing and other businesses, and fencing associated with rural residential development).

Small lot semi-rural land use has emerged through subdivision at or close to the current minimum standard of four hectares (as a permitted activity), as well as through the creation of Residential 4A and 4B Zones (5000m² and one hectare size average) that adjoin rural zoned land. This popularity of small-lot subdivision has been a noticeable feature of rural development during the last ten years, and has been identified as a concern for some during community consultation on the Draft District Development Strategy in 2017¹.

1.1 Scope

The scope of this assessment is to:

- Identify character areas that make up the rural zone and describe the landform, land cover and land use elements, and key characteristics that typify each character area.
- Determine any areas that are capable of, and suitable for, rural residential development or more intensive rural development/subdivision (that is consistent with the character of each identified area).

This landscape characterisation work will be used to inform the development of recommended objectives and policies, activity based rules, and standards for the Rural Zone.

1.2 Study Approach

This Rural Character Assessment was undertaken as an independent technical assessment. The study approach involved:

- Initial desktop review of existing information available on the District's landscapes, such as aerial photos, GIS data sets, analysis of existing residential densities and land typing information, and identification of draft character areas;

¹ 2017, Waimakariri District Council, Draft *Our District, Our Future – Waimakariri 2048*

- Field survey and site visits to assess existing topography, land use patterns, rural activities and rural residential development. Identification of the rural elements and character of the draft areas, review and refinement of the draft character area boundaries. A comprehensive photographic record was established.
- Collation and documentation of rural character descriptions for each area and refinement of boundary delineations.
- Analysis of the rural landscape's capacity for further/more intense rural residential development, more intensive rural development and non-rural activities.

1.3 Rural Character in the Waimakariri District

Landscape, as defined by the New Zealand Institute of Landscape Architects (NZILA), is the “cumulative expression of natural and cultural features, patterns and processes in a geographical area, including perceptions and associations” (NZILA, 2010). While all landscapes are dynamic and continually change, the rate of change varies under different physical, social and economic conditions.

Rural landscapes are inhabited landscapes, not to be confused with “wilderness” or “natural” landscapes where human presence is minimally present or absent.

Rural landscapes are, by their nature, strongly influenced by the type of rural activity and the intensity of associated settlement. Natural elements generally remain strongly evident but are overlaid by patterns and processes of human activity. Natural systems operate but, in places, are manipulated to enhance productivity. Human induced patterns and processes are related predominantly to productive land uses such as agriculture, horticulture and forestry, typically including paddocks, shelterbelts, woodlot and forest blocks, and cropping regimes. In more recent times some rural areas have seen a proliferation of residential activity typified by smaller land holdings, residences, buildings, structures, and enclosing shelter and amenity plantings.

This assessment has included an analysis of the combined result of the landform, established landuse and settlements patterns including vegetation and buildings. It does not consider in detail associated infrastructure such as transport and traffic, or factors that contribute to rural amenity such as noise or air quality.

When considered at a finer scale there are distinctly different types of rural character within the Waimakariri rural zone. The rural character varies along a continuum from the denser settlement patterns where rural residential activities dominate (e.g. Ohoka/Mandeville) to open farmland areas where large scale primary production dominates (e.g. Eyrewell dairy farms). Although both landscapes have a rural character, the nature of the patterns and elements that combine to make that character are quite different; one type of rural character is not better or worse than another.

This assessment describes the current rural character areas within the rural zone; the subsequent development of policy needs to consider what type of rural character is being managed and/or protected.

The existing planning provisions also influence the type of rural character that defines an area, primarily through lot size provisions. Currently the District Plan allows for subdivision of lots (and building of a house) at a density of no less than 4ha anywhere in the rural zone, resulting in approximately 1300 4-4.99ha ‘lifestyle blocks’ within the District. Activity on these smaller rural lots is typically focused on rural residential use with the balance land simply maintained as ancillary or used for small scale primary production. Allowing small lot subdivision in the rural zone can also attract non-primary production commercial activities not typical of rural

landscapes. This can in turn affect the rural character and create reverse sensitivity situations². In addition, allowing subdivision of rural land down to 4ha lots can have the effect of fragmenting productive farmland into uneconomic units. This too can change the rural character of the productive rural landscape.

The rural character of some parts of the District has changed considerably over the past 10-15 years as a result of small lot subdivision. The greatest proportion of rural subdivisions over the last 10 years has been for lots between 4 and 4.99ha³. While the proliferation of small lot subdivision in the southeastern part of the District (Ohoka/Mandeville) is recognised by many residents, the number of new lots created by subdivision in the rural areas of Oxford, Loburn, Rangiora and West Eyreton in the 10 years between 2006 and 2016 is also significant.⁴ This suggests the potential for ongoing subdivision to occur in all parts of the rural zone based on a number of underlying factors, bringing with it a change in rural character.

1.4 Determining Areas Capable of and Suitable for Rural Residential / Intensified Rural Development

Study Objective; Determine any areas that are capable of and suitable for rural residential development or more intensive rural development, (that is consistent with the character of the identified area and surrounding areas)

In order to consider the potential capacity for rural residential development or intensified rural development, a clear understanding of the community and Council aspirations for the rural zone in the future is required. The Council is considering that a single approach to subdivision across the whole rural zone is not appropriate for the future development and sustainable land use of the District. In particular, the proliferation of small lot rural subdivision throughout the District may not be desired due to effects relating to: increasing density of lifestyle blocks to the point of changing rural areas to semi urban in character, the fragmentation of productive land, the establishment of non-rural businesses, and the geographically dispersed requirement for supporting infrastructure such as roads, water supply, sewage disposal, and rubbish collection where rural residential density increases.

Statutory Guidance

The Canterbury Regional Policy Statement 2013 (RPS) includes a range of provisions that provide long-term guidance relevant to the consideration of potential intensification of land use in the rural zone (Chapter 5 Land-use and Infrastructure and Chapter 6 Recovery and Rebuilding of Greater Christchurch).

Figure 1 below shows the location of the Greater Christchurch boundary in the Waimakariri District as it relates to the identified rural character areas. The Greater Christchurch area

² Impacts of newer uses on prior activities occurring in mixed-use areas. Some activities tend to have the effect of limiting the ability of established ones to continue.

³ Waimakariri District Council *District Plan Effectiveness Review - Rural Environment Summary*

⁴ Waimakariri District Council *District Plan Effectiveness Review - Rural Environment Summary*

includes the urban areas and most densely settled rural areas in the southeast corner of the District south of the Ashley River /Rakahuri.

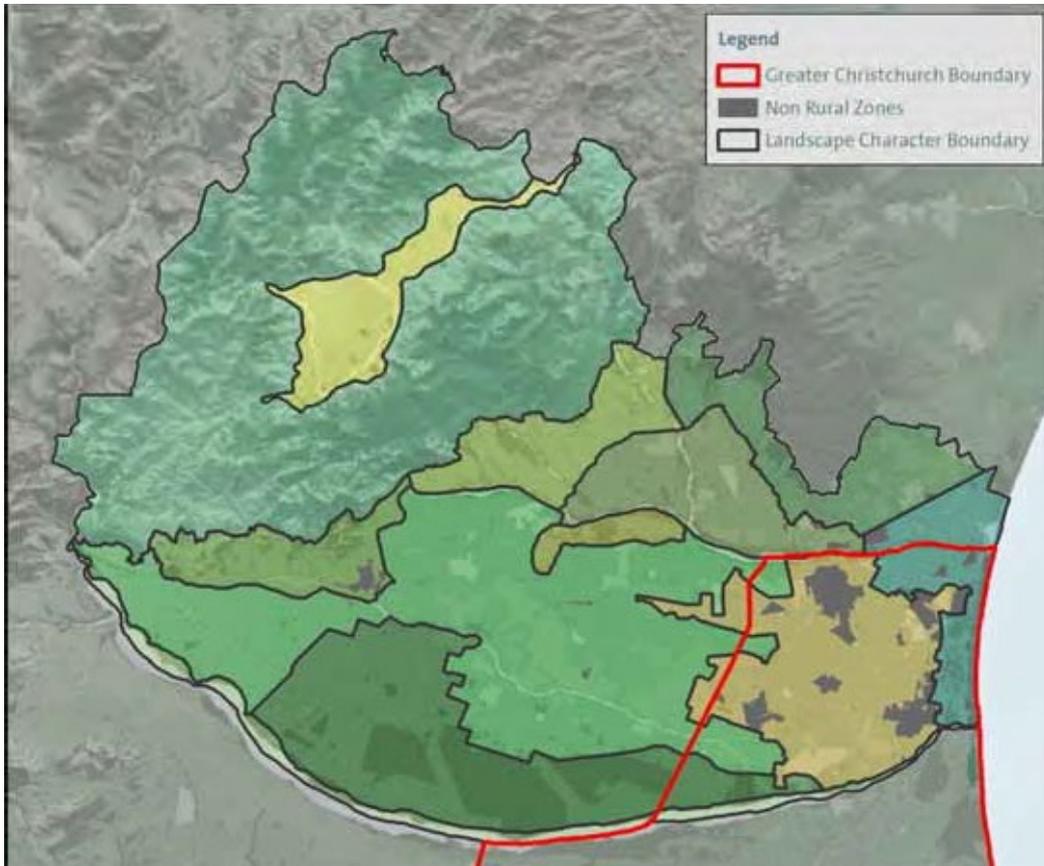


Figure 1: Greater Christchurch Boundary in Waimakariri District

For the area within Greater Christchurch, the focus is on recovery and rebuilding under Chapter 6 of the RPS. This chapter places an emphasis on the ability to ensure adequate land for residential and business redevelopment following the 2010/ 2011 Christchurch earthquakes and particularly focuses on the scale of recovery necessary. There is a requirement for land to be rezoned for residential and business development to enable growth to occur in the right places, through the use of greenfield priority areas. Within the rural parts of the Greater Christchurch area, there is recognition that rural residential development can impact on rural character and reverse sensitivity issues can arise.

The focus in RPS Chapter 6 is on urban activity and delineation of urban activities within urban areas. There is no specific guidance for density of residential development (other than for rural residential development) within the rural area of the Greater Christchurch area, except by application of the definition of urban activity. That definition includes residential units at a density of more than one household unit per 4ha of site area, and thus policy 6.3.1 is directive that development at a higher density should not generally occur within the rural zones. There is however no guidance on what scale of residential density is appropriate in the wider rural areas.

Chapter 5 of the RPS deals with land use and infrastructure across the region generally. Within this chapter there is acknowledgement that the rural areas are intended mainly for primary production activities.

The following points (summarised from Chapter 6 of the RPS) provides direction to the future shaping of the Waimakariri District rural zone. They have been used as the basis for considering what locations in the rural zone may be capable of, and suitable for, further rural residential development/intensification of rural development with respect to the management/protection of rural character.

- The primary focus for rural areas is on rural activities and particularly rural primary production.
- The majority of growth of urban activities (including any residential activity on lots less than 4ha) is to be located in urban areas, including sufficient housing choice to meet the region's housing needs, and there is a focus on urban consolidation.
- There is a need to ensure that adequate land is zoned and available for urban activities (residential and business development) generally within the District and specifically within the Greater Christchurch area to ensure recovery and growth.
- Activities in rural areas must avoid development, fragmentation or intensification that:
 - forecloses the ability to make appropriate use of that land for primary production
 - results in reverse sensitivity effects that limit or precludes primary production
 - contributes to significant cumulative adverse effects on water quality and quantity.
- There is a need to preclude incompatible activities within rural areas to avoid conflict between activities and reverse sensitivity effects.
- Urban activities include residential units at a density of more than one household unit per 4ha of site area and thus lot sizes less than 4ha are not anticipated to occur in the rural zones.
- District plans must identify areas to be used for primary production, and control the adverse effects of subdivision and land use in rural areas, including by:
 - ensuring subdivision and development does not foreclose the ability to utilise natural resources for rural productive purposes.
 - ensuring appropriate separation between activities to avoid reverse sensitivity effects on rural productive activities.
 - managing the interface between environments sensitive to the effects of rural production activities and areas in productive use.

Terminology Used in This Report

Lot Size

The terms relating to rural lot size used in this report are defined below for clarity. It is noted that these terms / lot sizes do not align with those in the RPS or other statutory documents. Given there is a range of definitions and associated lot sizes used in various planning documents, the terms set out below have been used for the purpose of describing rural character in this report. The lot sizes referred to below are not hard and fast bands, but intended to be indicative and representative of the understanding applied to this analysis.

Rural Residential – Refers to lots generally between about 5000m² and 4ha, with the primary purpose being residential rather than productive use.⁵

Small rural lots – 4ha to 10ha. Combination of residential and small scale primary production operations, woodlots, horticulture, livestock etc. In locations with a high density of small rural lots, the resulting rural character can be at the ‘residential’ end of the rural character scale rather than ‘productive’ rural end due to the relatively high density of buildings, fences, shelterbelts and small enclosed paddocks.

Productive Rural – 10ha+. Large lots/land parcels that support large scale or extensive primary production. Productive rural landscapes are associated with a low density of dwellings and buildings, large paddocks and farming equipment/buildings, lower density of shelterbelts, and plantation forestry.

Settlement

The term ‘settlement’ has been used in this report as a generic term referring to locations where communities, dwellings, schools, halls etc. are clustered or focused. Generally these have originated from the historic settlement pattern of small community centres throughout the rural area, but some may be more recent. Settlements referred to in this report include recognised townships or villages such as Cust, as well as the very small clusters of small lots that identify with a known location such as Bennetts. Use of the term settlement does not infer an urban character.

2.0 Rural Character Assessment

This section of the report describes the elements and patterns of the landform, land cover and land use that combine to define the rural character of an area that make it distinctive from the other character areas in the District. The District consists of three broad character typologies, largely based primarily on their contrasting topography: the Plains, Downlands, and Hill Country. These character types can be further subdivided into rural character areas when the land use, vegetation patterns and settlement patterns influence the overall character. Inevitably the subdivision pattern (lot size, lot density, extent of subdivision) has a strong influence on the land use activities and landcover patterns and therefore the subsequent rural character of an area. For example, an area dominated by small rural lots is typified by small paddocks, fenced and vegetated boundaries and road frontages, entranceway features and gates, long driveways, dwellings and out buildings. In contrast, larger lots associated with productive farmland are typified by large paddocks, with a lower frequency of boundary planting, fences, buildings and dwellings.

12 Rural Character Areas have been identified (refer **Figure 2**). **Figure 3** shows the character areas with the parcel size analysis provided by WDC.

⁵ Residential 4A zone lot size minimum 2500m², average 5000m². Residential 4B zone lot size minimum 5000m², average 1ha. The Mapleham 4B Rural zone has a minimum lot size of 1ha, and average lot size of 1.5ha. The RPS considers lots less than 4ha are not rural i.e. Urban and this would apply to the rural residential areas.

The 12 Rural Character Areas are described in the following section of the report.

Plains

Coastal Plains

Lower Plains

Waimakariri River Plains

Waimakariri River

View Hill - Eyrewell Plains

Okuku - Ashley Plains

Downlands

Oxford Downlands

Mt Thomas Downlands

Loburn - Sefton Downlands

Summer Hill Downlands

Hill Country

Lees Valley Basin

Oxford - Puketeraki Hill Country

2.1 Coastal Plains

The Coastal Plains rural character area encompasses approximately 15km of coast between the mouth of the Waimakariri River and the Ashley River/Rakahuri lagoon, and the coastal margin seaward of urban and residential areas of Kaiapoi, Woodend, Pegasus, and Waikuku. It also includes the lower river plains of the Ashley River/ Rakahuri. Much of this low-lying area is close to sea level, rising to 20m asl inland towards Rangiora. (Figure 4)

The area is characterised by its proximity to the coastal environment and lower reaches of the rivers and their estuaries, the presence of sandy beaches and dunes, the Ashley River/Rakahuri and Saltwater Creek lagoon and other coastal wetlands, extensive pine plantations along the dunes, and farmed low-lying plains which extend inland along the Ashley River/Rakahuri. Settlement is focussed in small coastal villages and towns so there is a sense of wildness and remoteness in the undeveloped areas between them.



Dairy farms near Waikuku Beach

Landform

The land type in this area is made up of Coastal Fringe and Low Plains (Appendix 2). The character is heavily influenced by the sea and the braided rivers that helped to build it. Coastal features include a long sweep of open sandy and pebbly beaches and an active dune system including a string of ponds, wetlands and remnant lagoons in the hollows and low-lying sandflats along the back dunes. The low-lying hinterland included in this character area comprises flat river floodplains of gravel, sand, silt and clay. Many of the low-lying areas, including those between the north bank of the Ashley River/Rakahuri and Sefton, are prone to surface flooding.

River mouths and estuaries are also key coastal landforms. The lower reaches of the Waimakariri River that mark the southern boundary of the unit are highly modified. The final 2km of the Waimakariri River that borders this character area from the Kaiapoi River confluence to the mouth, is a single channel, having been realigned upstream to flow through Wrights Cut.

The northern extent of the Ashley River/Rakahuri lagoon marks the northern boundary of the District. Where the Ashley River/Rakahuri reaches the sea, it spreads out into a large, generally unmodified estuary, which includes the Saltwater Creek mouth and estuary. While smaller than the Waimakariri River, the Ashley River/Rakahuri is also braided and has high biodiversity values including indigenous river bird habitat. The river is relatively steep compared with others in New Zealand and moves a substantial amount of sediment. The position of the estuary has varied considerably over time, resulting in a complex river mouth including a recurring process of migrating barrier-spits. The lower river reaches and estuary are also part of the Ashley Rakahuri Regional Park and are well recognised and used by the community for recreational activities (fishing, whitebaiting, walking, and biking).

Land cover

The sandy and pebbly beaches are a complex natural environment with river mouths, estuaries and sand dunes comprising a range of important habitats, particularly for birdlife. The indigenous

coastal vegetation along the back dunes provides a significant corridor for native biodiversity, including the Tūtaepatu lagoon, and associated wetland areas and vegetation remnants.

The landcover is characterised particularly by the presence of pine plantations dominating the fore dunes as well as some large tracts further inland. The pines have a stabilising influence and provide some shelter from the easterly wind. Also present are shelterbelts, pasture, willows, gorse and broom.

The Ashley River/Rakahuri lagoon is ranked as an internationally important wetland with a host of birdlife and is also significant for its saltmarsh vegetation, of which there is little left in Canterbury.

Land use

The coastal fringes and hinterland within this character area remain lightly developed. Behind the forested dunes, are the small coastal settlements of Waikuku Beach, Woodend Beach and Pines Beach/Kairaki strung along the coastline, backed by sparsely developed coastal plains and low-lying farmed river floodplains in the coastal hinterland.

There are three main roads providing access to the area, connecting and extending development from the larger towns along State Highway 1 to their beachside counterparts.

Other forms of built development include the Kaiapoi oxidation ponds, located on the north bank of the Waimakariri River, and the stopbanks and flood protection works created alongside the Ashley/Rakahuri and Waimakariri Rivers.

Much of the area is used for pastoral farming and there is some small scale horticulture and market gardens. Along the both banks of the Ashley River/Rakahuri the character area extends up to 10km inland, as the open farmed flats provide a coherent character in this area. The potential for flooding in these low-lying areas is reflected in the low density of development and the predominance of agricultural land uses.

The wider coastal area has a lengthy history of settlement. Coastal wetlands have long been of importance to tangata whenua and Māori settlement and travel were commonplace along this coastal character area, reflected in the numerous archaeological sites spanning its length. Evidence of past Māori occupation includes groves of karaka, rock drawings, middens, and pa site remains. Kaiapoi Pā was the principal settlement in the District; the major capital, trading centre and genealogical centre for Ngāi Tahu descendants. Today, the beaches, dunes and wetlands are enjoyed for a wide range of recreational activities, including fishing, swimming, bird watching, camping, walking, cycling and horseriding.

The coastal part of the Ashley River/Rakahuri lagoon and estuarine area comprises the Pacific Ocean Foreshore Conservation Area, a stewardship area managed by DOC. The natural character values of the coastal environment are outlined in detail in a separate report (currently being prepared for WDC).

Built form character and patterns

While the small coastal villages of Waikuku Beach, Woodend Beach and Pines Beach/Kairaki retain their own identity, they share a coastal holiday settlement character, incorporating holiday parks/ campgrounds and a low density of building. Dwellings are typically small to medium in size. The layout generally hugs the dunes, reflecting the character of the coastal dune system. Both Pines Beach and Waikuku Beach have a village common. Roads through these settlements

are narrow and rural in character, with seal merging into grassed verges. Areas of Residential 4a and 4b at Waikuku and Waikuku Beach have a rural residential character.

The coastal hinterland west of State Highway 1 is sparsely settled with a rural farming character reflected in the layout and form of the houses. Many of the dwellings are of a medium size and set back just 20m or so from the road, some forming part of a wider compound of sheds and yard space. Stopbanks are a noticeable modified feature in this otherwise flat landscape.

Boundary/edges (relationship with rural residential/small lot development)

The landward boundary delineates where the coastal influences and river floodplains have resulted in a lower density of settlement, namely sandy dunelands, interdunal wetlands, and low-lying flood prone land. It excludes the Pegasus Rural Zone and associated Rural 4B zone.

In the southern part of the District the character area extends approximately 3km inland. Along the Ashley River/Rakahuri banks, the character of the low-lying floodplains and flood prone land on the north bank with predominantly agricultural uses was considered similar up to 10km inland.

Key characteristics

- Coastal influences and elements, sandy beaches, dunes, interdunal lagoons and streams, river mouths and flood plains, and estuaries are present in the immediate coastal environment/ hinterland.
- Low-lying flood prone land is found behind the foredunes and near river mouths.
- Exotic forestry and small scale pastoral farming with larger agricultural lots along the banks of the lower Ashley River/Rakahuri.
- Small discrete settlements Waikuku, Woodend Beach and Kairaki.
- Medium to small pockets of pastoral farmland and primary production.

Potential for rural residential development / intensification of rural development

The southern part of this area (as far north as the Ashley River/Rakahuri) lies within the Greater Christchurch boundary which anticipates more intense future development.

Notwithstanding the above, further intensification of rural land along the coastal hinterland will change the existing character of the area. In the long term, the rural character of the coastal margin should be retained as open rural land to provide a buffer between the existing (and growing) urban development to the west and the coast. Dense rural residential development can not be absorbed in this coastal area and would better retained as open farmland/future open space for the community. Much of the land beyond the dunes is prone to localised flooding, which may restrict the type of future development that can occur.

2.2 Lower Plains

The Lower Plains are the gateway to the District from the main access route along SH1. The boundaries are defined by the physical landscape features of Waimakariri River to the south, the Ashley River/Rakahuri to the north, and by changes in settlement and development patterns to the west and east. Figure 5)

This rural landscape is characterised by its changing character in relation to recent small lot development. Once predominantly rural, characterised by productive land uses, low density

settlement and a sense of spaciousness, this area is now defined by its increasingly finer grained settlement patterns and human induced characteristics that overlay the rural environment.



Millfield Subdivision, Ohoka

Landform

This character area consists of a series of gently sloping fans, comprising mainly greywacke glacial outwash gravels, and alluvial deposits. Rapid tectonic uplift in the mountains and glacial action, together with easily eroded greywacke rock, impressive rainfall and the resulting braided rivers, have all worked together to build up these wide alluvial plains.

These low-lying plains are relatively flat, with large areas towards the coast and river mouths less than 20m asl, rising to some 100m asl at Springbank. Minor topographical variations exist, particularly in the southeast corner bordering the Waimakariri River in the form of low stony ridges or terraces and swales formed by the river's flood paths.

The Cust River, which rises in the hills above Oxford, flows through the centre of this character unit where it is largely channelised and called the Main Drain, then enters the Kaiapoi River. The Cam River - Ruataniwha is also a tributary of the Kaiapoi River, flowing southeast from Rangiora.

The large braided Ashley/Rakahuri and Waimakariri rivers mark the north and south boundaries of this unit respectively. A number of other small lowland streams and creeks flow through the area, though much of it was drained during the early years of European settlement in order to create farmland.

Land cover

There is little indigenous vegetation remaining in this character area, it having been largely replaced with high producing farmland and domestic gardens. A small wetland area off Sandhill

Road is notable with a QEII open space covenant. There are also small horticultural areas, exotic forestry blocks and riparian vegetation present. Tall trees, shelterbelts and roadside hedgerows of different heights frame and enclose many fields and residences.

The constantly changing environment of the dynamic braided rivers bordering the character area includes valuable pockets of vegetation and gives rise to unique ecosystems. The active plain of braided river channels of the Ashley River/Rakahuri on the northern boundary remains a largely unmodified natural environment, providing important habitat, which is particularly recognised for its birdlife. Threatened braided river birds that nest in the vicinity of this unit include the black-billed gull, the wrybill and black-fronted tern. Tall trees, shelterbelts and hedgerows are common, framing and enclosing fields, and compartmentalising the landscape.

Land use

The Lower Plains are highly modified and encompass the greatest density of small rural lots in the District.

Today, the boundaries of this character area comprise the densest rural settlement pattern in the District, edged by the urban areas of Rangiora, Kaiapoi, Woodend and Pegasus. It also includes the patchwork of 'Residential 4A and 4B Zones' including Mandeville North, Ohoka and Fernside and the growing extent of rural residential blocks at Swannanoa. This denser settlement, with its increasingly urban characteristics, encircles the remaining tracts of larger rural lifestyle, farming and horticultural properties.

While the rural roads and development contain limited 'urban' infrastructure, such as kerb and channel and street lighting, the regular spacing of letterboxes at driveways and linear hedgerow patterns, particularly where they follow the roadside, are indicative of the changing pattern of smaller scale subdivision into rural residential land use. Business activities such as construction and manufacturing are also occurring in this Lower Plains character area. Medium to small blocks of pastoral farmland remain in the area, as well as more intensive primary production activities such as greenhouse production, poultry and nursery operations and some small scale commercial activities.

The land and waterways in this area are of profound importance to Te Runganga O Ngai Tuahuriri. The character area also incorporates Maori Reserve 873 (MR 873), encompassing over 1000ha, predominantly in farmland. Tuahiwi village, the home of Ngāi Tūāhuriri in North Canterbury, is at the centre. While the area has been subdivided into smaller rural lots, only limited development has occurred and the overall character remains open and rural.

Historically, the area was also very important to tangata whenua with a number of signs of early occupation. A concentration of midden sites is found on the eastern edge of the character area, indicating a pattern of coastal movement of Māori settlers (supported by sites found in the Coastal Plains area). These become very dense and numerous in Pegasus Town and Kaiapoi's northern surrounds.

The Ashley Rakahuri Regional Park encompasses the Ashley River/Rakahuri and berm area from the Okuku River confluence downstream to the Ashley Estuary, allowing for protection works so that surrounding land can be protected from flooding, and enjoyed for a variety of recreation activities, from water-based activities to walking and cycling. There are multiple access points to the park, but one of the most popular is in this character area at the Rangiora/Ashley road bridge.

The north bank of the Waimakariri is partly in the Waimakariri River Regional Park – Kaiapoi Island, which caters for a range of recreational opportunities including cycling and walking access. The north bank of the river is also used for shingle extraction activities.

Built form character and patterns

The rural residential development of this area is characterised by medium to large modern homes with large garages and occasionally pools. Other common traits include paddocks between the road and dwelling, long curvy driveways, and gateway features such as post and rail fencing. Houses are generally some 30-70m from the road boundary and occasionally at a much greater distance.

The central part of the character area includes several Residential 4A and 4B zoned areas at Ohoka, Mandeville and Fernside. These clusters, with a relatively intense residential development, tend to be more urban in character than rural, due to their relatively large extent and presence of highly managed and modified landscaping, gardens, sealed driveways, and ornate entrances to subdivisions.

Other new patterns include properties that share a long, typically tree lined driveway, with smaller drives branching off to each of the respective dwellings. Only one or two of the dwellings within these subdivisions address the main road corridor, while residential development often extends several hundreds of metres behind the front sections.

Mandeville North is a key area of this subdivision growth where the traditional linear road network has noticeably changed to include new looping roading patterns.

The Woodend - Pegasus area in the northeast of this area is also facing a rapid pace of change. Pegasus Town is mixed density township of some 1800 modern residential dwellings and commercial businesses, backing onto the wetlands and pine forest in the coastal plains character area. The town is currently separated from Woodend township by a narrow stretch of rural land, and the Pegasus golf course (zoned as Rural Pegasus and Rural 4B) provides open space between the town and the Ravenswood development which will eventually adjoin the Woodend township on the west side of SH1.

In addition to the denser roading infrastructure, a number of major transmission lines traverse this character area on a broadly north-south alignment.

The lower reaches of the Waimakariri River are highly modified with stopbanks, groynes and cuts and the Ashley River/Rakahuri also has a long history of flooding through this character area, hence the river engineering and protection works visible along its banks from its confluence with the Okuku to the sea.

Boundary/edges (relationship with rural residential/small lot development)

The area has fundamentally been delineated by the density and size of the settlement pattern, given that the topography is essentially uniform throughout the area. The western boundary approximates the transition between the higher density rural residential character with the less dense extensive paddocks of the View Hill - Eyrewell Plains to the west. The outline of the character area generally follows the edge where contiguous lots are 4-5ha in size. This boundary roughly approximates the Greater Christchurch boundary, variously falling within and beyond it.

The area is bounded on the north by the Ashley River/Rakahuri and Rangiora urban boundary and to the east by the Kaiapoi and Woodend urban areas and less densely settled Coastal Plains.

Key characteristics

- Distinctly residential focused rural character overall with development clusters at Mandeville, Ohoka, Fernside (Residential 4A and 4B zones), having semi urban characteristics.
- The built and human modified environment is a prominent feature of the landscape.
- Moderate and high density of rural residential and small rural lots. The area is typified by finely textured lot boundaries and shelter planting, mailboxes, mown roadsides, entrance gates, houses and buildings resulting in an enclosed landscape.
- Predominance of lots 4.99ha and less with small areas of larger lots scattered throughout.

Potential for rural residential development / intensification of rural development

This area lies within the Greater Christchurch boundary which recognises and anticipates greater population density and development.

This area is already highly developed and has a distinct 'residential' rural character with very few areas of extensive productive farmland remaining. The area does have potential for some further rural residential development, without significantly changing what is already a very domesticated rural environment. Also, the flat nature of the topography enables further change to be less discernible from roads, as views are generally curtailed by boundary tree plantings adjacent to the roads. However, further intensification of residential activity will need to be managed carefully to avoid the whole area becoming a large sprawling 'rural suburb' devoid of structure or hierarchy of lot size. The remaining productive farmland provides important open space relief from the more densely settled land, being less enclosed by vegetation, allowing more distant views, and a simple uncluttered pastoral environment.

In order to retain some sense of rural character as well as providing for further rural residential development, planning measures should aim to achieve a landscape which is a complex of higher density nodes (such as Ohoka, Swannanoa and Mandeville) sitting within a matrix of less dense rural development or land uses. The critical aspect of this is that the whole area does not become a monotonous expanse of scattered rural residential and smaller lots. Rather, a coordinated pattern of development that concentrates more intensive rural subdivision around existing settlements (Springbank, Fernside, and Swannanoa) and retains large areas for productive land is required.

2.3 Waimakariri River Plains

This modified rural area is characterised by its proximity to the Waimakariri River, a very sparse level of settlement and built development, and prevalence of large scale dairy farming. This partially occurs on large blocks that contained forestry in the past. (Figure 6)



Open landscapes and productive land use dominates the Waimakariri River Plains character area

Landform

The Waimakariri River is an alpine river and one of the largest braided rivers in New Zealand. It rises in the mountains and enters the District at the gorge and exits at the coast at Kairaki, west of Kaiapoi. The underlying character of the unit is influenced by this major braided river, though it is not always a noticeable feature due to the limited public roads and viewing opportunities through this area. Willows lining the river banks cue to its presence from a distance, while it is generally incised below distinctive river terraces.

The western half of the character area is an Upper Plains land type, with the Lower Plains land type making up most of the eastern part of the unit. A small strip classified as Waimakariri Floodplain also extends into this area (refer Appendix 1 for detailed Land Type descriptions).

The plains comprise a series of gently sloping fans of greywacke gravels, made of rock debris produced during successive glaciations of the mountainous hinterland. Loess, carried by or blown down the river corridor covers the gravels to varying thicknesses.

These river plains vary in height, rising steadily from less than 20m asl below Eyreton, up to some 260m asl towards the upper reaches of the river. Burnt Hill is an exception to this, an isolated hill containing macrofossils rising 120 above the surrounding land.

The course of the View Hill Stream can be seen across the northern part of this area but flows appear ephemeral.

Land cover

This landscape is dominated by high producing grassland. Formerly encompassing large contiguous tracts of exotic forestry, much of Eyrewell has recently been converted to irrigated pasture, though relatively large strips of forestry continue to punctuate the landscape.

To the west and east of Eyrewell, shelterbelts and hedges create a gridded patchwork, with predominantly coniferous species. However, the more settled Eyreton area includes a more diverse range of vegetation with a variety of mature deciduous and indigenous trees and shrubs also utilised.

The typical linear vegetation patterns of shelterbelts and roadside hedges contrast with sinuous belts of willow following the terraced river edges of the Waimakariri River, and in the eastern corner of the unit, along the Kaiapoi River corridor. The roading pattern in the eastern part of the unit enables closer access to the river, and the distinctive willows signal the presence of water.

The Eyrewell Scientific Reserve, close to the river, is one of the few remaining remnants of dryland kanuka forest-shrubland on the Canterbury Plains. It has high biodiversity values in this area that is otherwise highly modified by agriculture and farming activities. Former vegetation of the wider Low Plains Ecological District likely to be represented here include lowland short tussockland, kanuka and manuka, and dry riparian kowhai-mixed hardwood woodland flanking the river.

Land use

This river plains landscape has been modified by rural land uses, the changing agricultural landscape reflective of the area's access to water and changing economic drivers in relation to primary production. It remains sparsely settled.

The early European runs in this character area such as Eyrewell, Worlingham and Burnt Hill were predominantly sheep farms, replacing indigenous vegetation with grassland. In the early 1900s, the government planted exotic forests throughout North Canterbury including Eyrewell Forest which occupied the eastern part of this unit. Over the years, strong northwest wind events felled many of the trees. More recently much of this forestry has been converted to irrigated pasture and dairy farming, altering the landuse pattern once more.

The pattern and density of shelterbelts and hedges shifts across the unit. From highly enclosed field patterns surrounded by well-managed hedges delineating small to medium parcels in the east around Eyreton, to more open rural shelterbelt patterns at the western end of the character area, and predominantly open fields in the centre of the area between Burnt Hill and the Eyre River.

Built form character and patterns

While modified, these River Plains are characterised by a relative lack of built form and associated openness. There is very little small rural lot or rural residential development. Built character is focused on farm dwellings and infrastructure including sheds, farm tracks, water storage ponds, and pivot irrigators, and stopbanks along the river.

Boundary/edges (relationship with rural residential/small lot development)

The northern and western boundaries adjoin the View Hill - Eyrewell Plains character area. The area is delineated by the comparatively lower settlement density and extensive farming patterns of the Waimakariri Plains character area.

The southern boundary follows the Waimakariri River margin.

Key characteristics

- Large scale pastoral farming –large paddocks, absence of shelterbelts, large sheds
- Central pivot irrigation structures and landuse patterns
- Plantation forests
- Open uncluttered landscape, enables expansive and distant outlooks
- Burnt Hill prominent topographic feature
- Waimakariri River margin with terraces and willows

Potential for rural residential development / intensification of rural development

This character area largely lies beyond the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities, in particular primary production. This aligns with the area's current rural character which is predominantly an open large scale productive landscape.

Development of rural residential lots in this character area should be discouraged in order to retain the existing open and productive character of the area. Given the absence of established settlements in the character area there is little opportunity for rural residential development to be developed in association with existing settlements.

2.4 Waimakariri River

The Waimakariri River forms the western and southern boundaries to the District. It exits the upper gorge at Woodstock and stretches in a distinctive braided reach approximately 85km through the plains to the coast. (Figure 7)

The river has a distinct identity in the District which contrasts with the adjoining land. It is one of Canterbury's best examples of a large braided river, together with the Rakaia River, that traverses the lowland plains on its way from the Alps to the sea.



Braided riverbed at the lower reaches

Landform

Within the western part of the District the river winds through a gorge where it is confined to a single swift flowing channel deeply cut into the rock. High rocky cliff faces flank both sides of the river along a 16km stretch of the river where it passes the hilly terrain of Oxford Forest and Woodstock Station. Downstream of the gorge the river changes to a wide gravel bed with many braided channels (approximately 1-1.5km wide) all the way to the sea with the exception of where it narrows to a short rocky gorge at the GorgeBbridge.

The braided river is a dynamic river system – one of several such rivers that are formative elements that created the Canterbury Plains. The river is made up of a broad active gravel bed with braided water channels. Frequent floods move the gravels in the riverbed and realign the river channels.

Old river terraces are evident at the upper sections of the braided river system, and gravel cliffs and banks cut by floods are present downstream. Stopbanks have been established in places along the lower reaches of the river where the riverbed and adjacent land are at similar elevations.

The tidal effects on the river extend upstream to just downstream of the SH1 and rail bridges.

Land cover

Vegetation in the gorge is dominated by indigenous vegetation and some exotic weed species. Downstream of the gorge the extent of the gravel bed and the margins are densely vegetated predominantly with exotic species. Plantings of willow, poplar and pine trees have been

established along many stretches of the river as a flood and erosion control measure. Further upstream production pine plantations extend into the river margins.

Land use

The predominant use of the river is for recreational purposes such as fishing, jet boating, and four-wheel driving. There are numerous formal and informal access tracks and roads that access the river from the surrounding land and road network. Coordinated gravel extraction is carried out in several places along the lower Waimakariri River, serving both as a flood protection measure and for extraction of the gravel resource.

Water for irrigation is diverted from the river at the Browns Rock intake just downstream of the Gorge Bridge.

Built form character and patterns

The road and rail bridges in the lower river reach and the Gorge Bridge are the most substantial structures in the river. In the lower reach, the SH1 and railway bridges are in close proximity to each other and the crossing of the high-voltage transmission line is upstream of that location. The Browns Rock irrigation water intake is located just downstream of the Gorge Bridge.

A jet boat ramp upstream of the SH1 bridge is used frequently, as are other access points in this area, to use the river for recreational purposes, such as swimming and fishing.

The Waimakariri River Regional Park includes streams and wetlands and provides for many recreational opportunities within the river including walking, mountain biking, trailbike riding, swimming, fishing and jetboating, and kayaking can be found in the lower river area, where the wetlands associated with the river can be explored.

Stopbanks line the lower part of the Waimakariri River and oxidation ponds are in the immediate hinterland downstream of Kaiapoi Township.

Just upstream of the river mouth the settlement of Kairaki is located in the immediate vicinity of the river, extending north along the coastal hinterland.

Boundary/edges (relationship with rural residential/small lot development)

The Waimakariri District boundary runs down the nominal centreline of the river bed. The outer edges of the river are delineated where the riverbed vegetation adjoins pastoral farm land, following the escarpment edges and stopbanks lining the river.

Key characteristics

- Sinuous river gorge in upper reaches with steep sided banks
- Dynamic gravel braided river system, creating distinctive pattern across the plains
- Active gravel bed flanked by dense exotic weedlands, riverbank protections and plantation forestry, and stream tributaries and wetlands in the lower reaches
- Well used for recreational activity especially the lower reaches

Potential for rural residential development / intensification of rural development

Not anticipated or appropriate within the river corridor.

2.5 View Hill - Eyrewell Plains

The View Hill - Eyrewell Plains is the largest character area. While characteristics vary across this extensive area, overall the landscape character is considered sufficiently cohesive to be defined as one unit. (Figure 8)

While land use patterns are relatively uniform, the western border of this area is distinguished by its proximity to the mountains and downlands; their visual prominence on the skyline and a growing sense of remoteness. The eastern boundaries of the unit, in contrast, mark the transition to the densely settled heart of the district.



A diverse range of farm types with varying paddock sizes



View Hill end of the character area

Landform

As with the wider plains landscapes, these View Hill - Eyrewell Plains are made up of alluvial gravel fans with a very gentle gradient, built up from rock debris produced during successive glaciations of the mountains to the west. Loess mantles the gravels.

The land typing (refer Appendix 1 for Land Type descriptions) is a combination of Upper Plains to the west, where this character area meets the more elevated downlands, and the Lower Plains land type to the east, towards the coast.

The elevation of this extensive area increases steadily from east to west, broadly lying between 40m asl and 360m asl. View Hill (419m asl) and Starvation Hill (288m asl) are exceptions to this otherwise relatively uniform sloping topography. These isolated hill features comprise a different geological formation; Starvation Hill incorporating basalt lava flows while View Hill includes bands of sandstone, mudstone and coal.

The Ashley/Rakahuri and Eyre Rivers, and the smaller Cust River are key features flowing through this area, originating in the foothills immediately to the west.

Land cover

Most of the land cover in this character area is high producing exotic grassland. These pastoral plains are interspersed with patches of cropland and small stands of exotic forestry. Other vegetation includes the shelterbelt plantings that are prevalent throughout the area. Fields and parcels of varying shape are often bounded by dense, coniferous shelterbelts, though the outlook from roadsides varies to include open views across paddocks in places.

Enclaves of mature exotic trees associated with small well-established settlements and farmsteads punctuate the area (such as Horrellville, West Eyreton and Bennetts).

Deciduous trees, and gorse and broom along the sinuous riparian margins of the Eyre and Ashley Rivers and to a lesser extent, the Cust River, break the linear shelterbelt pattern. Despite the high level of weed invasion within and along the Ashley River/Rakahuri bed, its ecological and

biodiversity values remain high with valuable pockets of indigenous vegetation surviving amongst the exotic plant species.

Land use

These View Hill- Eyrewell Plains landscapes have been highly modified, the indigenous vegetation replaced with high producing farmland, as well as forestry and cropping, many years ago. Several (6) European Archaeological Sites/Heritage NZ Sites are scattered across the character area reflecting this farming history. These include churches, farming artefacts and dwellings such as Mt Thomas Station Homestead.

While intensive dairy farm operations are becoming increasingly prevalent on the River Plains to the south, those large scale farming patterns are present but less common in this area. Instead, the gridded pattern of fields and shelterbelts remains dominant. Broom and gorse form low roadside boundary hedges while coniferous shelterbelts, trimmed and untrimmed, delineate parcels of land, creating a patchwork of enclosed fields. Some horticultural activity is evident.

The area is characterised by a mixed settlement pattern where large areas of open farmland are interspersed with small rural settlements and expanding areas of rural residential subdivision such as around Cust, Horrellville, West Eyreton, Swannanoa, near the Waimakariri Gorge bridge and south of South Eyre Road.

Built form character and patterns

The built form character in this area encompasses a spectrum from traditional to contemporary, reflecting the time of settlement. Old farmsteads can be glimpsed set behind dense established shelterbelts and exotic garden plantings, clustered with associated farm sheds. Some are set back just 30m from the road, while others are located down long, straight driveways.

There are also traditional ribbon or road orientated patterns of development in older villages such as at Cust where there is a concentrated string of houses immediately fronting the Cust-Oxford Road (SH72). The more recent and rapidly growing rural residential settlement, taking place on parcels such as those off Eyredale Road and Depot Road between Oxford and the Gorge Bridge, conveys a different pattern of modern homes typically set further back. These more recent dwellings are often set back 50-70m and occasionally further, at the end of a relatively long swooping driveway and orientated in a variety of directions, not necessarily related to the road or lot boundaries.

As with much of the Waimakariri District, long straight roads are a distinct characteristic of the rural area, a result of the flat topography and historical alignments such as the Tram Road logging route. The more open nature of this character area (compared to the Lower Plains further east) accentuates the linearity of the roads and open expansiveness of the plains.

A major transmission line intersects this unit at the western end, close to the change in slope where it meets the downlands and foothills.

Zone boundary/edges (relationship with rural residential/small lot development)

Differing topography delineates the northern boundary of this area where the plains meet the foothills east and west of Oxford at the Eyre River and Ashley River/Rakahuri. To the south is the more open and larger scale farming area associated with the Waimakariri River plains, and the more densely settled Lower Plains to the east.

Key characteristics

- Expansive mosaic of medium scale pastoral farming, defined by grid patterning of the road network
- Many pockets of small rural blocks (4ha and less) scattered through the area
- Established settlements at West Eyreton, Horrellville, Cust, Bennetts and Carleton
- Small rivers and streams flow through the area, typified by exotic trees and shrublands
- Isolated landforms of View Hill and Starvation Hill
- Straight lines of mature shelter belts enclose small, medium-sized and large paddocks accentuating the grid pattern of the area
- Small plantation blocks and woodlots of exotic forest
- Clusters of mature shelter and amenity trees are often associated with established farmsteads and historic community centres (churches, schools, domains, community halls)

Potential for rural residential development / intensification of rural development

This character area lies outside the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities, in particular primary production.

Parts of this character area are at risk of becoming continuous expanses of small lot subdivision with a similar 'residential' character to the Lower Plains character area. This is particularly evident in the eastern part of the character area south of the Eyre River and throughout the Horrellville/West Eyreton/ Cust area. While currently areas of open farmland remain, continuation of the current subdivision pattern is not sustainable in terms of retaining a 'productive' rural character.

Future rural residential development or small lot subdivision should be undertaken in a coordinated manner by building on the character of existing settlements, while avoiding land fragmentation between these areas. In order to maintain the rural character of the remainder of the character area, further rural residential development should be concentrated around existing settlement areas, such as Cust, Bennetts, Horrellville, and West Eyreton in order to coalesce the higher density development in defined locations and retain the large areas of rural productive land between the settlements.

2.6 Okuku - Ashley Plains

The Ashley River /Rakahuri forms the southern boundary of this character area, separating it from the View Hill Eyrewell Plains, with the northern boundary transitioning into the lower slopes of Mt Grey. (Figure 9). The topography is gently sloping from the higher downlands in the west towards the lower plains and coastal landscapes in the east. This Okuku-Ashley Plains unit encompasses a smaller area than its southern counterpart and includes the settled areas of Okuku, Loburn, Ashley and Sefton. It is characterised by its location between the Ashley River /Rakahuri and the foothills of Mt Grey, its accessibility to Rangiora and a regular spatial distribution of rural residential settlement, and a distinctive mosaic of vegetation cover and agricultural uses, including established orchards.



Okuku River runs through the Okuku Ashley Plains character area



Okuku Ashley Plains are slightly more undulating than the View Hill - Eyrewell Plains to the south

Landform

This character area is wedged between the major landscape features of the braided Ashley River/Rakahuri and the foothills of Mt Grey. The land typing (Refer Appendix 1) of these Plains

Landscapes are defined by the transition from the Upper Plains to the west at elevations of approximately 150m asl, to the Lower Plains to the east, at some 20m asl. The underlying geology is made up of river alluvium, gravel and sand fans, and terraces.

West-east running fault scarps, north of the Ashley River, reveal the Ashley and Loburn Fault Zones where the land appears buckled or folded.

Several creeks, streams and rivers dissect this character area on their way to join the Ashley River/Rakahuri and the sea, including the Garry River and Okuku River which drain Mt Thomas, and Makerikeri River, Stony Creek and Saltwater Creek draining Mt Grey.

Land cover

While high producing exotic grassland dominates the land cover in this area, the area is characterised by its greater density and range of tree and shrub cover than elsewhere on the plains. Open fields are interspersed with patches of exotic forestry, short-rotation cropland, and orchards and horticultural operations concentrated on the fringes of the Makerikeri River. Many shelterbelts, woodlots and deciduous amenity plantings add to the mosaic of vegetation.

The riparian margins of the Ashley/Rakahuri, Makerikeri, Okuku and Garry Rivers also contain a mix of deciduous hardwoods and gorse and broom. Pockets of indigenous vegetation survive amongst the exotic plant species on the Ashley River/Rakahuri, providing important habitat, particularly for birdlife, and high ecological values.

Land use

The differences in character between these northern Okuku-Ashley Plains and the View Hill - Eyrewell Plains to the south are in part related to the more undulating and dissected topography, however these plains also contain a finer grained settlement pattern, the patchwork of smaller parcels highlighted by the shelterbelts and hedgerows that frame and enclose them.

In the early days of European settlement, much of this area was once managed as one large farm, Loburn Station, before becoming a flourishing fruit-growing area by the mid-1900s. The pattern of protective shelterbelts partitioning the landscape can be seen developing alongside the Makerikeri River in aerial photographs from the 1960s.

Today, with its close proximity to Rangiora, numerous rural residential and lifestyle properties have developed, dispersed rather uniformly between the Ashley River/Rakahuri and Makerikeri River to the west, and fanning out to the northwest from the settlement of Ashley.

Built form character and patterns

The area encompasses a range of parcel sizes, from clusters of residential scale properties around 2000-10,000ha to different scales of rural residential and lifestyle lots, up to quite large tracts of land used for pastoral grazing around the Okuku area.

Given the extent and maturity of vegetation in the area, much of the more mature built development is screened or filtered from roadside views. The age and size of homes also appears diverse. However, there are many new rural residential properties containing medium to large modern homes which are noticeable due to the more limited vegetation around them. Some also introduce a new character and pattern where they occupy rear sections, many properties sharing an access way rather than fronting a road.

Three transmission lines traverse the character area, two in close proximity to Rangiora, across the Ashley River/Rakahuri and into the downlands area, and another towards the northern boundary.

The railway line extends along the eastern end of the character area from Ashley to Sefton and beyond. The historic settlement pattern along the railway is still evident in the settlements of Ashley and Sefton with the wood processing mill near Ashley being one of the biggest industrial operations in the District. While the Ashley River separates this character area from Rangiora, the Ashley River Bridge directly links the town to the largely rural Ashley area.

Boundary/edges (relationship with rural residential/small lot development)

The Ashley River/Rakahuri defines the southern boundary. The northern boundary with the adjoining Downlands character areas is defined by a change in slope and elevation and subsequent density of settlement. The road/ railway line between Ashley and Sefton, extending towards the northern district boundary, defines the eastern boundary, as the plains to the east have a different, more extensive settlement pattern partially due to the flood risks associated with lower Saltwater Creek.

Key characteristics

- Streams and rivers cut through alluvial plains physically dissecting the landscape, creating more topographical diversity than found on the flatter View Hill - Eyrewell Plains to the south.
- Mosaic of medium scale pastoral farming, to the west, defined by the river/stream and road network.
- Historically a range of agricultural uses, including orchards and horticulture.
- Range from relatively high to moderate density of small rural lots and rural residential settlement typified by boundary and shelter planting, resulting in an enclosed landscape.

Potential for rural residential development / intensification of rural development

This character area lies outside the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities, in particular primary production. The Greater Christchurch boundary adjoins this character area at its south west corner along the Ashley River/Rakahuri.

Parts of this character area are becoming continuous expanses of small lot subdivision with a similar 'residential' character to the Lower Plains character area. This is particularly evident in the eastern part of the character area from the Okuku River to Ashley between Loburn, Loburn North and extending along the northern margin of the Ashley River/ Rakahuri east of the Okuku River. While areas of open farmland remain in this part of the character area, continuation of the current subdivision pattern is not sustainable in terms of retaining a 'productive' rural character. The Okuku area west of the Okuku River retains an open pastoral landscape character.

Future rural residential development or small lot subdivision should be undertaken in a coordinated manner by building on the character of existing 'high density' areas, while avoiding sporadic land fragmentation throughout the whole character area. In order to maintain the rural character of the remainder of the character area, further residential development should be concentrated around existing settlement areas, such as Ashley, Loburn, Loburn North, Loburn Lea and Okuku, in order to coalesce the higher density development in defined locations and

retain the large areas of rural productive land between the settlements. Future spatial planning should also recognise and reflect the particular character of the local topography (alluvial plains dissected by numerous rivers and streams) through creation of an open space/trail network along waterways and connecting to the road network.

2.7 Oxford Downlands

This character area is situated towards the northwest of the District and includes the township of Oxford and its hinterland. The area is bounded by the Eyre River and wraps around the toe of Mt Oxford to Ashley Gorge. (Figure 10)



Small rural lots typically enclosed with shelter planting



Settlement pattern on the downlands north and northwest of Oxford village

Landform

The landform varies from relatively flat to steeply rolling in places. Elevation across the area rises from approximately 250m asl around Oxford, increasing gradually to the west to some 400m asl, and more abruptly to the north where the downlands meet the spurs of the foothills.

Wedged between the Upper Plains and Northern Hard Rock Hills (refer Appendix 1), the land typing within this area is largely classified as 'northern loess mantled soft rock hills and downs' (refer Appendix 1) predominantly comprising rounded rolling and steep rolling downlands dissected by river and stream valleys.

There are three geological features of note in the area: Whites Creek Eocene macrofossils, the Eyre River Eocene foraminifera, and the Oxford Oligocene Chalk Quarry, the only New Zealand example of chalk.

Land cover

As with the rest of the plains and downlands units, the dominant land cover is high producing exotic grassland. However, the area is notably more vegetated than the Mt Thomas Downlands to the north. Tracts of indigenous beech and podocarp remnant forest are scattered through the area particularly in gullies and on escarpment faces. One of the larger of these is View Hill Scenic Reserve, a separate stand of indigenous forest and manuka/kanuka, just south of the steeper hill ranges and Oxford Forest Conservation Area.

Gorse, broom and willows dominate the riparian margins of the Eyre River while linear areas of shelterbelts and hedgerows occupy the flatter land closest to the river and on the outskirts of Oxford village.

The landscape is a zone of transition from the modified pastoral rural plains to the more natural character of the hills beyond.

Land use

The settlement pattern of the area is dominated by Oxford village. The village is situated at the eastern end of the character area, at the base of the Mt Oxford foothills. One of the defining characteristics of the town is this backdrop, with views to the hills framed along the north-south orientated roads.

Two Heritage New Zealand sites in Oxford, the Oxford Lock Up and the Redwoods building, represent some of the early European history in the area. European settlement of Oxford dates back to the mid-1800s, development of the town being principally related to farming and forestry, activities that continue in the area today. The western part of the character area displays fewer signs of rural residential settlement, with farming use dominating these fan and river terraces west of Coopers Creek.

A number of QE II Open Space Covenants are present in the character area, with most of these being loosely grouped in the northern central part of the unit. Refer Appendix 2, Figure 8.

Four Maori artefact sites are identified loosely centrally in the character area: two along rivers, one near the Miro Downs valley and the last on the hillside above. Refer Appendix 2, Figure 9.

Built form character and patterns

The settlement pattern on the outskirts of Oxford village is relatively dense rural residential lots and small farms, with the density decreasing where the slopes become steep. West of Coopers Creek, settlement becomes increasingly dispersed with little sign of the recent growth in rural lifestyle properties so prevalent in many other parts of the District. The settlement pattern extends out from Oxford towards Coopers Creek and View Hill in the west and along Ashley Gorge Road towards the northeast. These areas have an established settled landscape character and high amenity with mature exotic trees.

Zone boundary/edges (relationship with rural residential/small lot development)

The southern edge is largely defined by the Eyre River and the eastern boundary approximates the transition between this and the adjacent character area based on density of settlement. The undulation of the downlands is used as a defining factor along the boundary to the adjacent plains.

Key characteristics

- The combination of the hilly topography, remnants of indigenous vegetation, small rural lots and forested hill backdrop give this area a distinct small scale character.
- Relatively high rural residential amenity from mature vegetation and long-established settlement within the diverse topography of the downlands landscape.
- Pastoral farming that follows the landform patterns dominates west of Coopers Creek.

Potential for rural residential development / intensification of rural development

This character area lies well outside the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities, in particular primary production.

The rural area immediately adjoining Oxford village to the east, north and west to Gammans Creek has a relatively continuous and diverse mix of small rural lots ranging from 1000m²- 4.0ha with a distinctive 'residential' rural character. In particular there are several clusters of 1000m²-10,000m² lots along Woodside Road and at Gammans Creek. These denser enclaves tend to occur on the flatter land. The density of lots less than 4.0ha decreases west of Coopers Creek and towards Ashley Gorge. There are several areas of Residential 4a adjoining or close to Oxford village.

Future rural residential development or small lot subdivision should be undertaken in a coordinated way to avoid sporadic fragmentation of rural land across all of the Oxford Downlands. The creation of rural residential lots down to 1000m² in the rural area needs to be carefully managed if the rural character is to be retained.

The future settlement pattern could be based on the current situation where smaller rural lots are clustered around already settled locations such as Oxford, Woodside and Coopers Creek, while the remainder of the open farmland is retained in larger rural lots and farms. Elevated and hilly topography has a higher visual sensitivity to change (than flat land) in that poorly sited buildings or earthworks can be seen from many locations. Consideration should be given as to how this potential effect can be managed.

2.8 Mt Thomas Downlands

This downlands landscape at the foot of Mt Thomas has a predominantly pastoral agricultural character with built form and modification largely limited to fencing, farm tracks, farm sheds and dwellings. (Figure 11)

Numerous waterways flow through these downlands, draining into the upper reaches of the Ashley River/Rakahuri while the proximity to the steepening hills and mountain ranges beyond conveys a sense of enclosure to the northwest.



Downlands south of Okuku River dominated by pastoral farming

Landform

This character area comprises the slopes and downlands forming a transition between the foothills and ranges around Mt Thomas, and the rural plains to the east. The elevation ranges from approximately 150m asl near the Ashley River/Rakahuri border, to 300m asl and more along the lower Mt Thomas slopes. The elevation provides an outlook south over the lower lying plains landscapes, where there are gaps in vegetation.

The landscape is finely dissected by a series of rivers (Ashley/Rakahuri, Garry and Okuku Rivers) and streams, with the geology of these downlands dominated by associated alluvial gravel fans and occasionally extending into the basement greywacke sandstone and argillitic mudstone/siltstone of the slopes above.

Land cover

These elevated, undulating hills predominantly support high producing exotic grassland, interspersed with a few tracts of exotic forest. The relatively open paddocks contrast with the densely vegetated slopes above, where native and exotic forest dominates.

While tall coniferous shelterbelts provide a gridded pattern to parts of the landscape, the riparian edges of many of the waterways are also vegetated, largely by gorse and broom, exotic trees and smaller pockets of broadleaved indigenous hardwoods, adding more informal, sinuous lines to the overall field pattern. This accentuates the underlying landform pattern that follows the drainage of the catchment towards the Ashley River/Rakahuri in the south.

Land use

This character area is very sparsely settled with few roads. The dominant land use remains farming, with a small proportion of exotic forestry. The downlands and foothills are a transition between the highly modified plains below, and the more natural mountain ranges above and the overall character is of a relatively remote rural landscape. Sheep and cattle farming is more common than dairy farming in this area, with limited irrigation compared to the plains landscape.

Built form character and patterns

There is very little built form in this area. Primarily it consists of farm buildings, sheds, barns, farm workers' accommodation and homesteads. Apart from outlying sheds, buildings are typically grouped together at the end of roads, each primary dwelling with a number of associated farm buildings clustered around.

Boundary/edges (relationship with rural residential/small lot development)

The northern boundary is delineated by the change in land use from grass farmland to steeper forest/native bush.

The Ashley River/ Rakahuri marks some of the southern boundary with the differing settlement patterns of the adjoining zones delineating the remainder. The Karetu River at Whiterock forms the northeastern boundary with the District boundary to the north in this area.

Key characteristics

- Predominantly medium to large pastoral farming operations.
- Elevated land provides outlooks across the plains giving it an open feel. This is contrasted with the substantial presence of the steep and forested hill backdrop, that provides large scale enclosure to the north.
- Rivers and streams dissect the sloping farmland with associated vegetation.

Potential for rural residential development / intensification of rural development

This character area lies well beyond the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities in particular primary production. This aligns with the area's current rural character which is predominantly an open large scale productive landscape.

With the exception of Glentui, there are no established settlements in this character area. Rural residential development or small lot subdivision can not be absorbed in this character area without changing its existing rural character. Long term planning should seek to retain the current character of productive farmland.

2.9 Loburn-Sefton Downlands

This long narrow character area wraps around the base of Mt Grey and the Ashley Forest, which fall into adjacent Hurunui District. It is characterised by a marked transition in slope from the Coastal and Okuku-Ashley Plains boundary up to the Mt Grey foothills, and a significant rural residential pattern of settlement along the lower slopes. (Figure 12)



Mix of small rural lots and farmland

Landform

These foothills and undulating downlands are predominantly categorised as Northern Loess Mantled Soft Rock hills and downs (refer Appendix 1 Land Types Descriptions), while the Upper Plains land type extends into the southwest of the area. The underlying geology is largely composed of old gravel alluvial fans interspersed with younger material and occasionally extending into the more elevated areas of greywacke conglomerate. The Karetu River, a tributary of the Okuku River, contains a bed of limestone (as exposed in the Whiterock limestone quarry).

Elevation varies from approximately 100m asl along the Plains boundary to some 400m asl in the vicinity of Whiterock and the lower slopes of Mt Karetu.

Land cover

The majority of the area is medium and small sized pastoral farming, with small tracts of forestry and vegetated gullies extending into the area from the adjacent steeper slopes. A small part of the Ashley Forest extends into this character area and there are also some plantation forestry operations and woodlots scattered throughout. In the northwest area of the character area the landcover includes a patch of broadleaved indigenous hardwoods within a gully system associated with the Grey River. The area around Loburn and Loburn North is more closely vegetated with exotic shelterbelt and amenity plantings.

Land use

These rolling hills support a relatively fine grain of subdivision as well as pastoral farmland. While not all developed, the settlement pattern is distinctly rural residential in some pockets such as Copples and Forestry Road and some clusters off Carrs Road. Most of the settled downlands occur within a band between 100m and 200m asl while the upper slopes are farmed or in forestry. The downlands accessed off Marshmans Road are more rolling and some parts of this area contain larger paddocks and farms. Northeast of Carrs Road the downlands rise relatively steeply and dwellings can be found along the escarpment near the road with an outlook over the plains.

A lime quarry is cut into the hillside north of Whiterock at the northern end of the unit.

Built form character and patterns

The buildings in the downlands range from homes and farm utility sheds clustered in well-established settings to relatively new medium to large residential dwellings. The latter appear to be more numerous, located on evenly dispersed rural residential parcels fanning out from the Ashley/Rangiora area, breaking up open farmland into smaller scale blocks.

From Carrs Road in the Loburn area, the relatively abrupt rise in slope and layers of vegetation limits views to the development. Development in the eastern part of this unit is more visible due to the greater road access and less complex topography, however, the established shelterbelts help filter and break up views.

Boundary/edges (relationship with rural residential/small lot development)

The upper elevation boundary is the Waimakariri District boundary. The lower boundary utilises roads and the Makerikeri River to approximate the change in settlement density to that in the adjoining character area and the steepening of the slope. The eastern boundary is delineated along the road/ railway between Ashley and Sefton, extending north towards the District boundary.

Key characteristics

- Rolling and incised more complex topography, with steeply rising slopes along Carrs Road.
- Areas of medium sized pastoral farming, with shelterbelts and plantation forests.
- Relatively dense small block landholding with density lessening as elevation increases – with associated shelter and amenity planting.

Potential for rural residential development / intensification of rural development

This character area lies well beyond the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities in particular primary production.

Small lots of 4ha and less are relatively common and dispersed throughout the area, particularly at lower elevations. There are very few lots less than 2000m² in this character area. The long

established Loburn North, Loburn and Sefton are recognised local communities. The more densely settled areas are separated by medium to large areas of productive farmland.

The rural character resulting from the settlement pattern and density of small rural lots of this downlands landscape is between the denser 'settled' Oxford Downlands and the predominantly farmland rural character of the Mt Thomas Downlands.

Future rural residential development or small lot subdivision should be undertaken in a coordinated manner to avoid sporadic sprawl of small lots throughout the area and to retain some open farmland character. In order to maintain the rural character of the remainder of the character area, further residential development should be concentrated around existing settlement areas, such as Ashley, Loburn, Loburn North and Sefton

Future development of the downlands needs to be managed to ensure the rural character is retained. Elevated and hilly topography has a higher visual sensitivity to change (than flat land) in that poorly sited buildings or earthworks can be seen from many locations. Consideration should be given as to how this potential effect can be managed.

2.10 Summerhill Downlands

The Summerhill Downlands form a distinct unit characterised by its abrupt elevation within an otherwise relatively flat plains landscape. The character area is bounded to the north by the Ashley River/Rakahuri and to the south by the View Hill - Eyrewell plains. (Figure 13)



Western end of Summerhill dominated by grazed pasture.



Eastern end of Summerhill with pine forestry

Landform

The rolling Summerhill Downlands rise rapidly to a height of almost 300m asl, approximately 140m higher than the surrounding plains. The area shares similar geological characteristics with the other downlands character areas to the north and east, particularly the Loburn area and Mt Grey foothills. Summerhill is classified as a land type of Northern Soft Rock Hills and Downs (refer Appendix 1 for Land Type descriptions), with a small area of Upper Plains encircling it on the boundaries.

The core rolling downlands comprise an area of brown-weathered greywacke-clast conglomerate or sedimentary rocks, surrounded by gravel alluvial outwash fans of different ages. The Ashley River/Rakahuri flows around the base of the steeply rising hill along its northern boundary, where it has eroded the slopes of Summerhill into steep escarpments.

Land cover

Much of the landcover on the Summerhill Downlands is pastoral farmland, however a large band of exotic forest covers the central area. Smaller stands of trees, riparian vegetation following minor watercourses, and shelterbelts are also present. The Ashley River/Rakahuri to the north is lined with deciduous trees, gorse and broom.

Land use

Farming and forestry are the primary land uses in this character area. Settlement of the area is limited, focused at the western end of the character area. The eastern end of the area is dominated by open rolling paddocks with a few dispersed clusters of farm dwellings and associated utility buildings.

Pine Hill House and Buckland are registered heritage buildings, old farmsteads dating back to the mid to late 1800s, associated with early European farming in the Summerhill area.

Built form character and pattern

The lower elevation and more gentle topography at the western end around Summerhill and Elliot Roads has the highest density of settlement with small rural blocks and rural residential lots. Here, a number of newer, more densely settled rural lifestyle developments are located amidst scattered homes of more mature character.

There are a few small clusters of newer homes on the elevated central downlands. As these dwellings are clustered together, the open space between groups is maximised. Together with the rolling topography and vegetation this assists with their integration into the rural landscape.

Zone boundary/edges (relationship with rural residential/small lot development)

The area is bounded to the north by the Ashley River/Rakahuri and to the south by the differing topography between the adjacent flat, low-lying character areas.

Key characteristics

- Isolated hill topography amidst the flat plains.
- Predominantly pastoral farming in east and more rural residential development on western part, separated by an area of forestry in the centre.

Potential for rural residential development / intensification of rural development

This character area lies beyond the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities in particular primary production. The greatest density of small lots is concentrated on the gentler topography at the northern end of the character area and south of Summerhill Road. Compared to the adjacent plains area there are few lots of 4ha and less.

Future rural residential development or small lot subdivision should be restricted to the gentler topography and avoid sporadic sprawl across all of the Summerhill Downlands. While the steeper slopes are less likely to be subdivided, a coordinated approach to retain the existing productive rural character is required. As with the other Downlands area, the elevated slopes which are highly visible from the surrounding plains have an additional sensitivity to changed land uses.

A concentrated cluster of settlement can not be absorbed into the existing character of the Summerhill Downlands, rather, small to medium sized farms should be retained to provide a predominantly productive rural character. Future settlement patterns of this character area should be considered in parallel with the adjacent View Hills - Eyrewell Plains area with existing settlements at Cust, Bennetts and Carleton.

2.11 Lees Valley Basin

Lees Valley character area is a large elevated basin floor enclosed by steep undeveloped hill country and the mountains of the Puketeraki Ranges and Oxford foothills, dominated by pastoral farming and its sense of isolation. (Figure 14)



The relatively flat basin floor is dominated by grazed pasture with some areas of valued indigenous habitat

Landform

The Lees Valley character area is part of a land type defined as a Small Intermontane Basin, and is surrounded by the Front Ranges that separate the basin from the plains in the east. The valley floor lies at an elevation varying between approximately 400m and 500m asl, transitioning abruptly into the surrounding ranges. The basin floor is generally flat and slopes down to the southeast corner where the Ashley River/Rakahuri exits the basin and cuts through the mountains via the Ashley Gorge.

The Whistler River and Ashley River/Rakahuri originate in the foothills west of this valley and encircle the lower part of the basin, separating the flats from the moderately steep hill country surrounding them. The upper end of the basin, Duck Creek catchment, is typified by areas of wetland, streams and drainage channels.

The rocks and soils in the valley are derived from glacial alluvium, a mix of gravels, silt and clay in low river terraces. It includes most of the water catchments of the Ashley/Rakahuri, Whistler, Lillburn, and Townshend Rivers, while the Puketeraki Range falls predominantly into Selwyn District.

Land cover

The character area is dominated by large areas of improved pastures, dissected in places by shelterbelts and small woodlots. However, high value remnant areas of indigenous vegetation remain in places. Lees Valley contains some of the best preserved indigenous lowland and montane ecosystems in the South Island. The valley floor remnants are particularly important. They include numerous fens, bogs and swamps, many of which are highly representative of pre-European vegetation communities. Several areas of indigenous grasslands and red tussock on alluvial outwash surfaces also remain. These ecosystems are now very rare in Canterbury. The indigenous grasslands on the Ashley River Alluvial Fan are of particularly high value⁶.

Land use

Pastoral farming is the primary landuse. Clusters of farm buildings, homesteads and their associated shelter planting are located at the outer edge of the basin often near the toe of the hill. The area provides a high-country like appearance, which differs from the more intensively farmed plains.

There are several small conservation areas within the valley including the Whistler River Marginal Strip, the Lees Valley Recreation Reserve and an Open Space Covenant.

Built form character

The valley is very sparsely settled, however there are several moderately sized dwellings of various ages and a full array of farm buildings including woolsheds, workshops, cattle yards, three huts, and an office/staff amenities complex. The remote high-country character is underpinned by the openness, views to the mountain ranges, remote qualities relating to the difficult access and the sparse settlement of the basin.

Boundary/edges (relationship with rural residential/small lot development)

The boundary of the character area is defined by the change in topography and land use, where the flat pastoral basin floor adjoins the steep undeveloped slopes.

Key characteristics

- Isolated, elevated basin enclosed by mountains.
- Dominant land use pastoral farming.
- Contains some of the best preserved indigenous lowland and montane ecosystems in the South Island.
- Sparse settlement pattern with few farmsteads and other buildings and structures to support farming activities.

Potential for rural residential development / intensification of rural development

This character area lies well beyond the Greater Christchurch boundary and as such RPS guidance directs that its primary focus should be on rural activities in particular primary

⁶ Boffa Miskell 2012., *Identification of Vegetation and Habitat Sites on Cromdale Station Lees Valley*. Prepared for Waimakariri District Council

production. This aligns with the area's current rural character which is predominantly an open large scale productive landscape with relatively extensive grazing.

The basin has open productive farmland character dominated by flat grazed pasture lands.

Intensification of small lot rural subdivision could not be absorbed into the Lees Valley landscape without changing its existing rural character.

2.12 Oxford - Puketeraki Hill Country

The Mountain Ranges Character Area encloses the Lees Valley basin and is composed of the southern end of the Puketeraki Range and the Oxford foothills with elevations between approximately 500m and 1950m. The extent of this area marks the southwestern boundary of the Waimakariri District and is a small part of the Canterbury foothills. (Figure 15) The foothills abutting the downlands and plains comprise the well-known Canterbury peaks of Mt Oxford (1364 m), Mt Richardson (1047m) and Mt Thomas (1023m) A large proportion of the character area is owned/managed by DOC as Forest Conservation Areas (Puketeraki, Oxford, Mt Thomas). Refer Appendix 2 Figure H.



Mt Oxford/Oxford foothills – with dense indigenous forest cover and the Oxford Downslands



The Puketeraki Range encloses the northwest side of Lees Valley basin. landform

The Puketeraki Range is part of the Canterbury mountains and foothills comprising steep to very steep dissected terrain. Sharp crested peaks and relatively smooth rounded ridgetops are characteristic of the area, and scree and bedrock outcrops are common at higher elevations. The Oxford foothills are strongly rolling to steep, moderately dissected hills that graduate down to the edge of the plains. Ashley Gorge is a significant feature of the area where the river cuts through the Oxford foothills and also enables road access to Lees valley.

Land cover

The steep inland ranges support a dynamic pattern of ecological habitats, which have often been grazed in the past, including snow tussock, subalpine scrub, alpine rockfield vegetation above 1200m and induced short tussock grassland, matagouri scrubland, and pockets of remnant beech forest at lower elevations.

Extensive indigenous beech and remnant podocarp forest are the dominant vegetation on the Mt Oxford and Mt Thomas foothills, in contrast with the pasture dominated downlands and plains below. Large parts of the indigenous forest are contained within the Oxford Forest and Mt Thomas Forest conservation areas. The Puketeraki Forest conservation area is located to the north of Lees Valley, where it forms the District boundary to Hurunui and Selwyn Districts. Exotic forest plantations occupy the lower eastern slopes of Mt Thomas.

Land use

Large areas of the hill country accessed from Lees Valley is in pastoral lease for extensive grazing (Mt Pember and Snowdale) with Woodstock pastoral lease extending across the western slopes of Mt Oxford above the Waimakariri Gorge.

The Oxford foothills are characterised by a lack of built development and the large Conservation Areas of Mt Oxford and Mt Thomas with their network of walking tracks. Dramatic long-distance

views over the District are available from elevated ridgelines. This character area is enjoyed for recreation and conservation. The Puketeraki Ranges are more remote and together with their higher elevation and more challenging terrain are less frequented for recreation than the more accessible foothills, but are still well used for tramping and hunting.

Built form character and patterns

There are very few built elements in this character area. Recreational huts managed by DOC are scattered within these ranges, linked by tracks. Some historical tracks and structures associated with logging operations in the 1800s and early 1900s are still evident in places along the foothills, such as those found around the Wharfdale Track area.

Boundary/edges (relationship with rural residential/small lot development)

The boundary of the character area is defined by the change in topography and land cover/use, where the flatter farmed land of the downlands and Lees Valley Basin adjoins the steep undeveloped slopes of Mt Oxford.

Key characteristics

- High, steep incised hills which have a dominant presence on the adjacent downlands and plains.
- The mountain ranges provide an important backdrop to views across the plains, as viewed from many places across the District.
- Predominance of dense indigenous vegetation on the foothills including beech and podocarp forest communities.
- The open slopes of the Puketeraki Ranges support a diverse range of vegetation and habitat – alpine, subalpine, scrublands, tussock grasslands and remnants of beech forest.
- Very little built form or infrastructure.
- The area has a remote character with a dominance of native vegetation and supports a dynamic natural environment.
- Public conservation land provides for recreation and accessible backcountry experiences.

Potential for rural residential development / intensification of rural development

No ability to absorb subdivision within the Oxford-Puketeraki Hill Country due to high landscape character sensitivity and very low levels of existing modification.

3.0 Conclusions

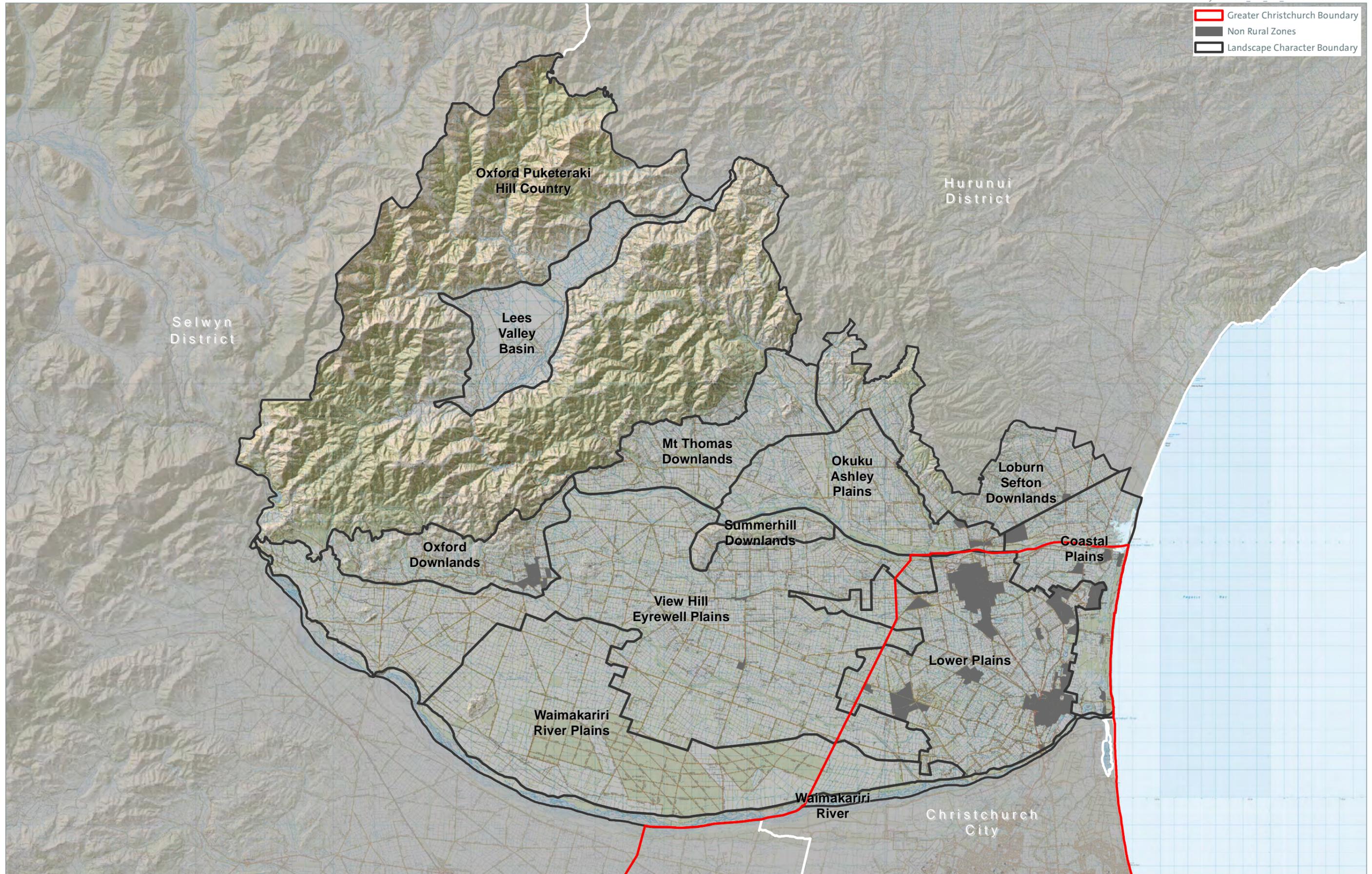
1. The current single approach subdivision provisions for the whole Rural Zone is not sustainable in terms of retaining rural character throughout the District. The 4.0ha minimum lot size is resulting in sporadic fragmentation of the Rural Zone. Subsequently, in places where subdivision has been most intense, the rural character of the landscape is at risk of

being lost altogether.

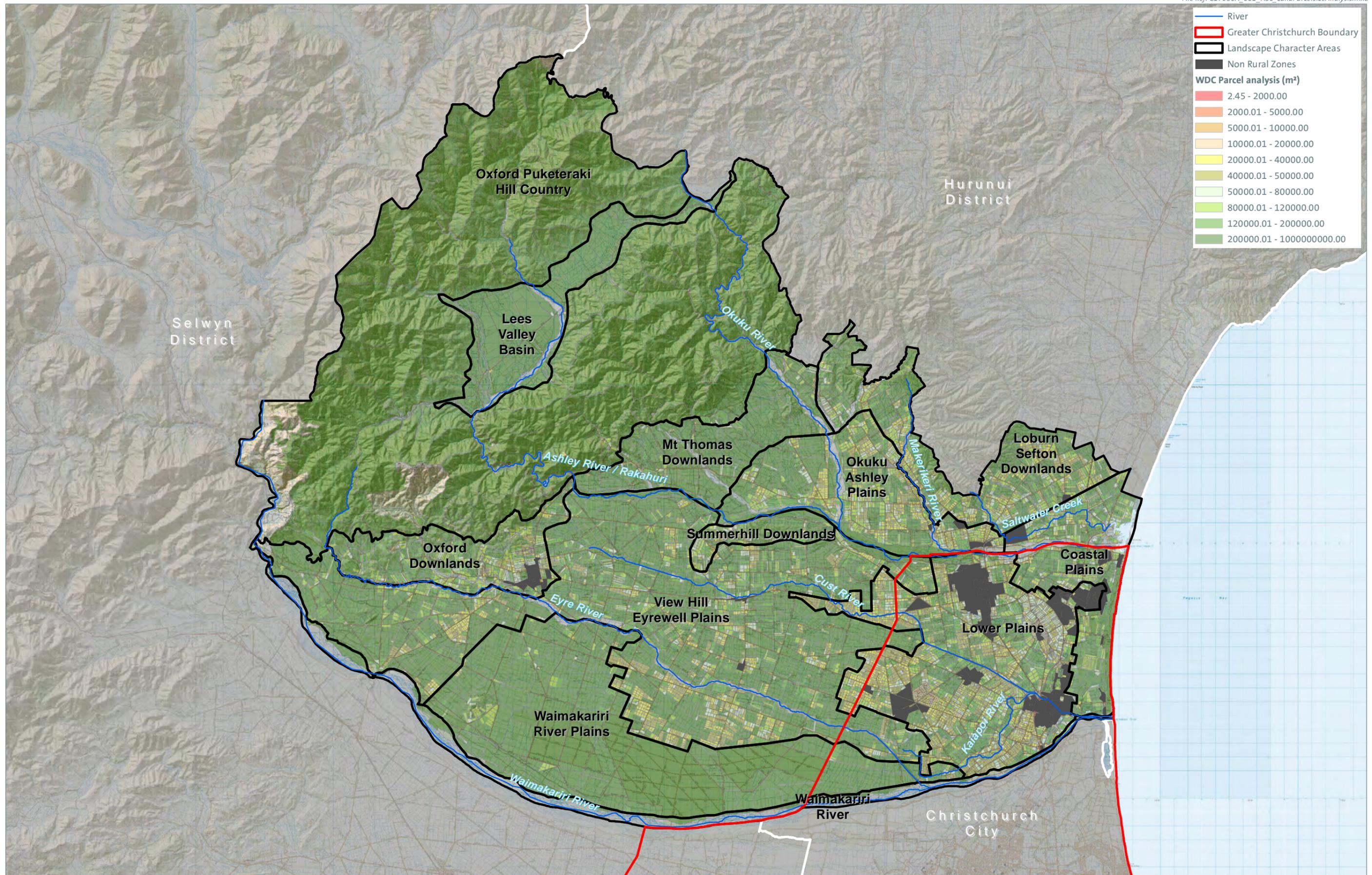
2. The advice provided in this report for locating any future rural residential development is aligned with the RPS guidance. The RPS recognises and anticipates greater population density and development within the Greater Christchurch boundary and a focus on productive primary production beyond the boundary. The regional growth policies seek to ensure that rural residential development is well planned and coordinated, and that areas zoned for rural residential development are located close to existing towns or villages. For many of the rural character areas, this report has identified the preference for future rural residential development to be located where there is already a high density small rural lots, or adjacent to existing settlements and villages (regardless of their zoning). Concentration of small rural lots/rural residential subdivision in particular locations rather than allowing sporadic fragmentation of the rural land, will serve to protect the open productive rural character while providing for areas of settlement with a more 'residential' rural character.
3. If future rural residential development is planned to occur in association with existing settlements, careful consideration will need to be given on a location by location basis as to how this can be achieved sympathetically to retain and enhance the character of the settlement and adjacent rural area. The existing settlements in the district differ greatly in terms of their scale and character. For example, providing for additional rural residential development around a very small settlement such as Bennetts is quite different to development at Cust village. As far as possible the character of the existing settlement should be reflected in any new rural subdivision, such as the extent of area around existing settlement, accessway and lot layout patterns, lot size and orientation, building setbacks, and vegetation patterns. This should be considered at the appropriate stage of the plan review process.
4. Special consideration of how further small lot subdivision could occur on the Oxford Downlands, Mt Thomas Downlands and Loburn-Sefton Downlands is required. While the undulating topography of the downlands is able to visually absorb small lot subdivision and new dwellings due to its ability to 'hide' built structures in the folds of the land, it is also the case that poorly sited structures in elevated or prominent locations can change the rural character of an area. This could be potentially managed through rules/standards in the Plan that require, for example the identification of a building platform and that enable the consideration of the potential effects of building location and earthworks.
5. The table below summarises the potential for future intensification/rural residential subdivision for each rural character area.

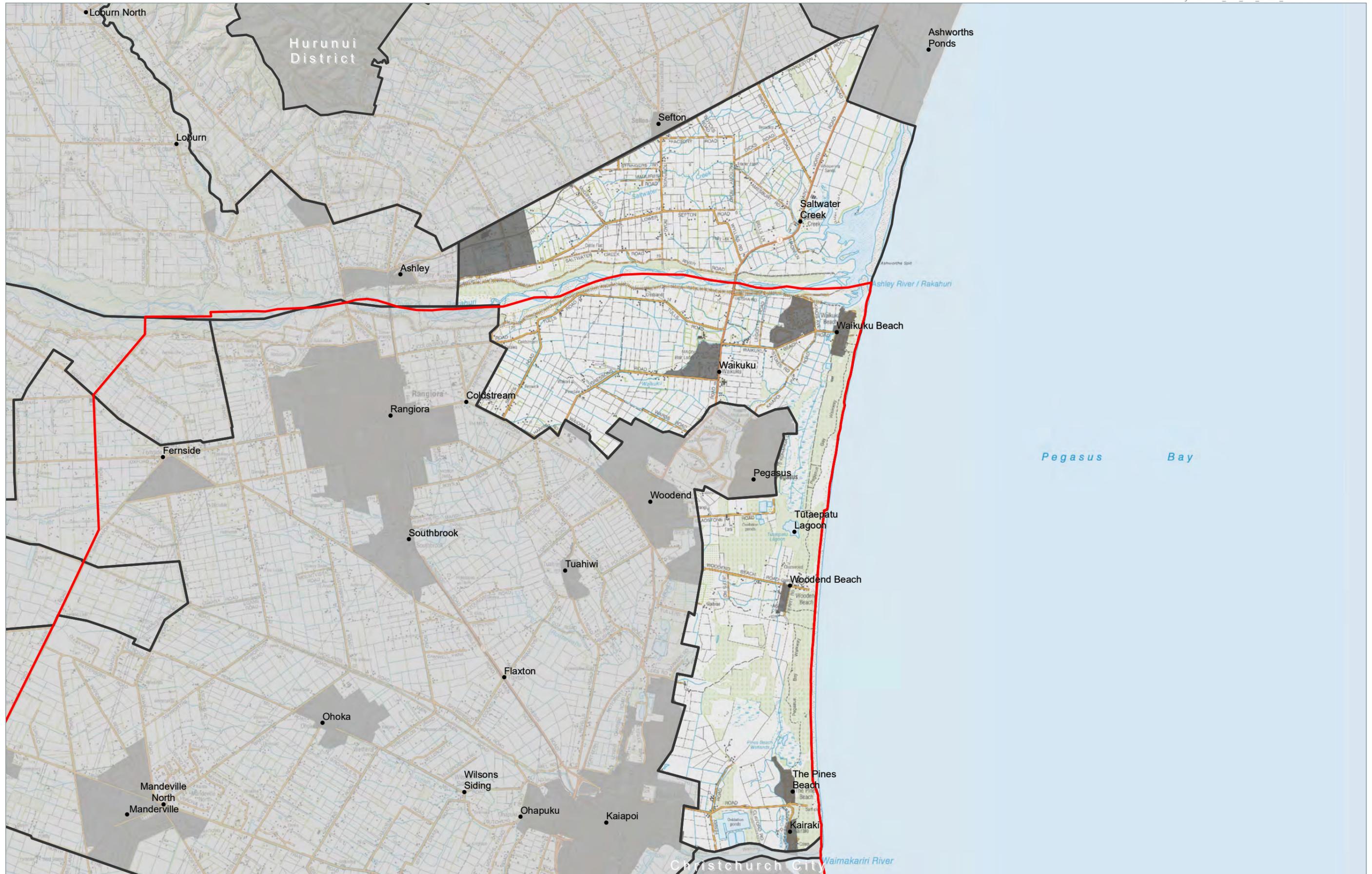
Rural Character Area	Potential intensification/ rural residential subdivision
Coastal Plains	Concentrate any future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Woodend/Waikuku/Sefton. Variety of lot sizes 1ha to 5000m ²
Lower Plains	Concentrate future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Rangiora, Kaiapoi, Ohoka, Swannanoa, Mandeville, Fernside, Tuahiwi, Woodend, Waikuku. Lots < 5000m ²
Waimakariri River Plains	Rural residential /rural subdivision should not be encouraged in this character area given the absence of existing settled nodes.

Waimakariri River	N/A
View Hill - Eyrewell Plains	Concentrate any future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Cust, Carleton, Horrellville, West Eyreton, Bennetts. Variety of lot sizes 1ha to 5000m ²
Okuku-Ashley Plains	Concentrate any future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Ashley, Loburn, Loburn North, Okuku. Sefton. Variety of lot sizes 1ha to 5000m ²
Oxford Downlands	Concentrate any future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Oxford, Woodside and Coopers Creek, Gammans Creek. Variety of lot sizes <5000m ²
Mt Thomas Downlands	Nil
Loburn - Sefton Downlands	Concentrate any future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Ashley, Loburn, Loburn North, Sefton. Variety of lot sizes 1ha to 5000m ²
Summer Hill Downlands	Concentrate any future rural residential /rural subdivision around existing intensive nodes/settlement areas such as Cust, Carleton, Bennetts. Variety of lot sizes 1ha to 5000m ²
Lees Valley Basin	Nil
Oxford - Puketeraki Hill Country	Nil



- Greater Christchurch Boundary
- Non Rural Zones
- Landscape Character Boundary



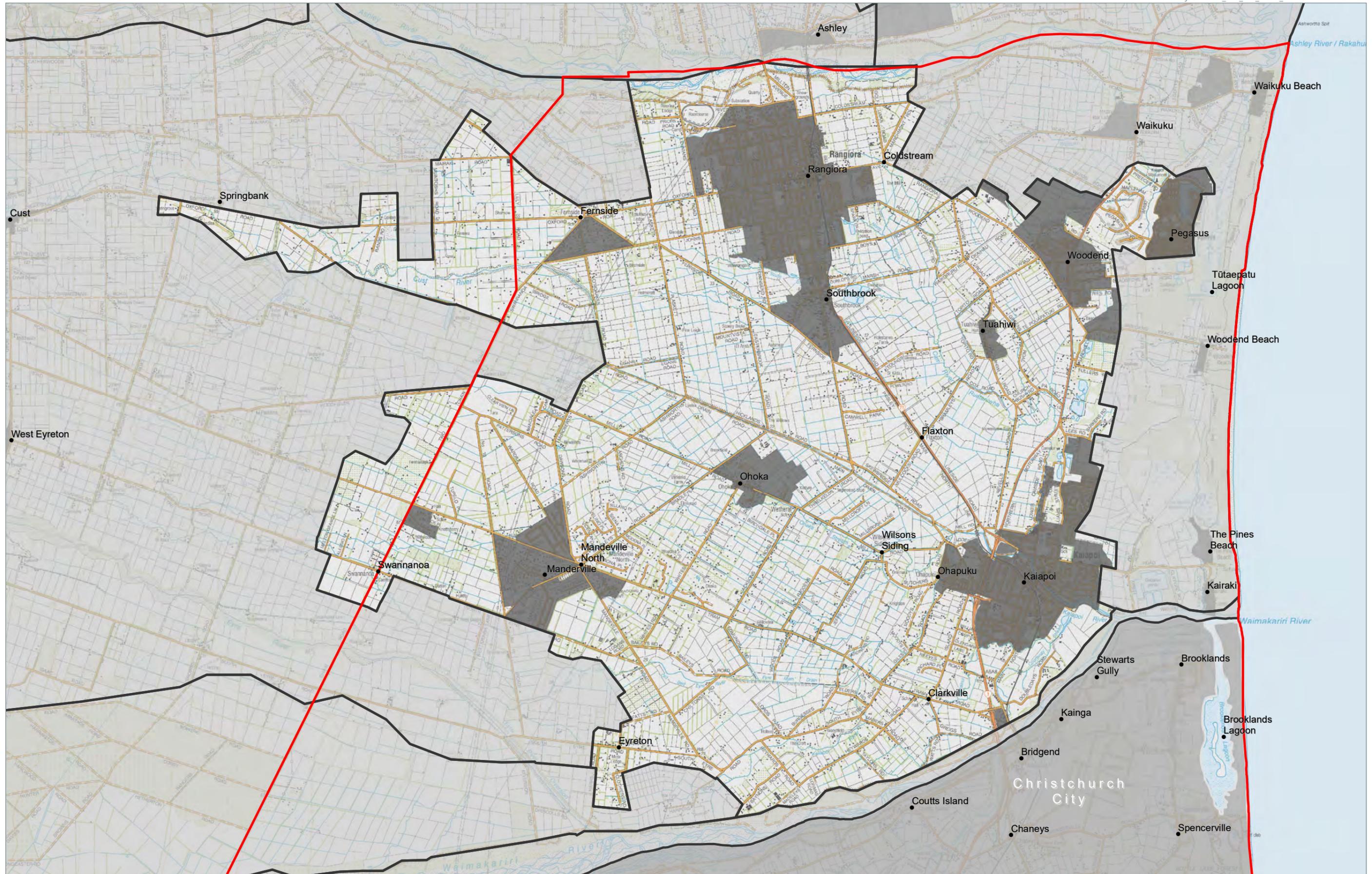


Data Sources:
Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

- Greater Christchurch Boundary
- Non Rural Zones
- Landscape Character Boundary

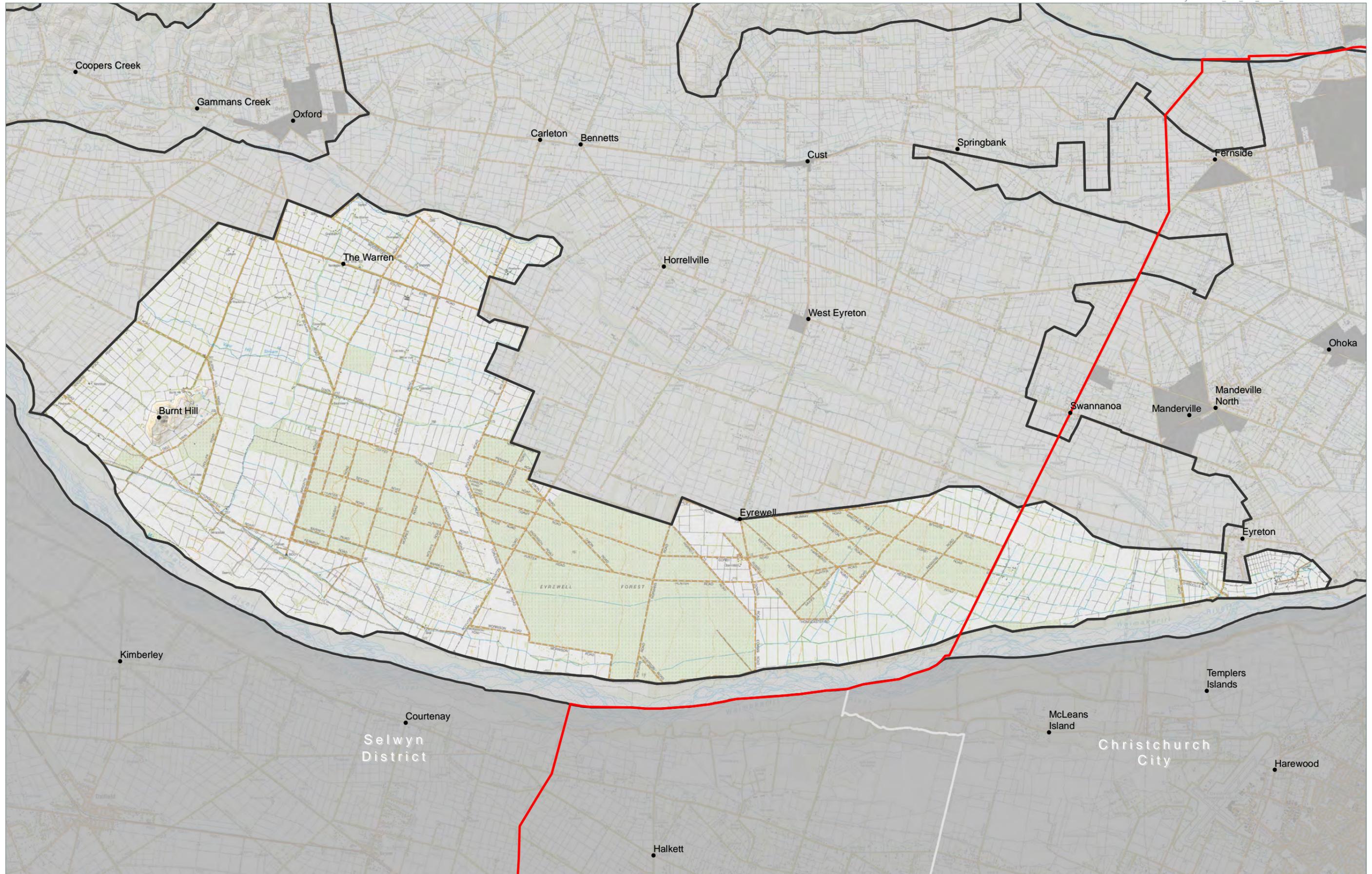


Data Sources:
Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

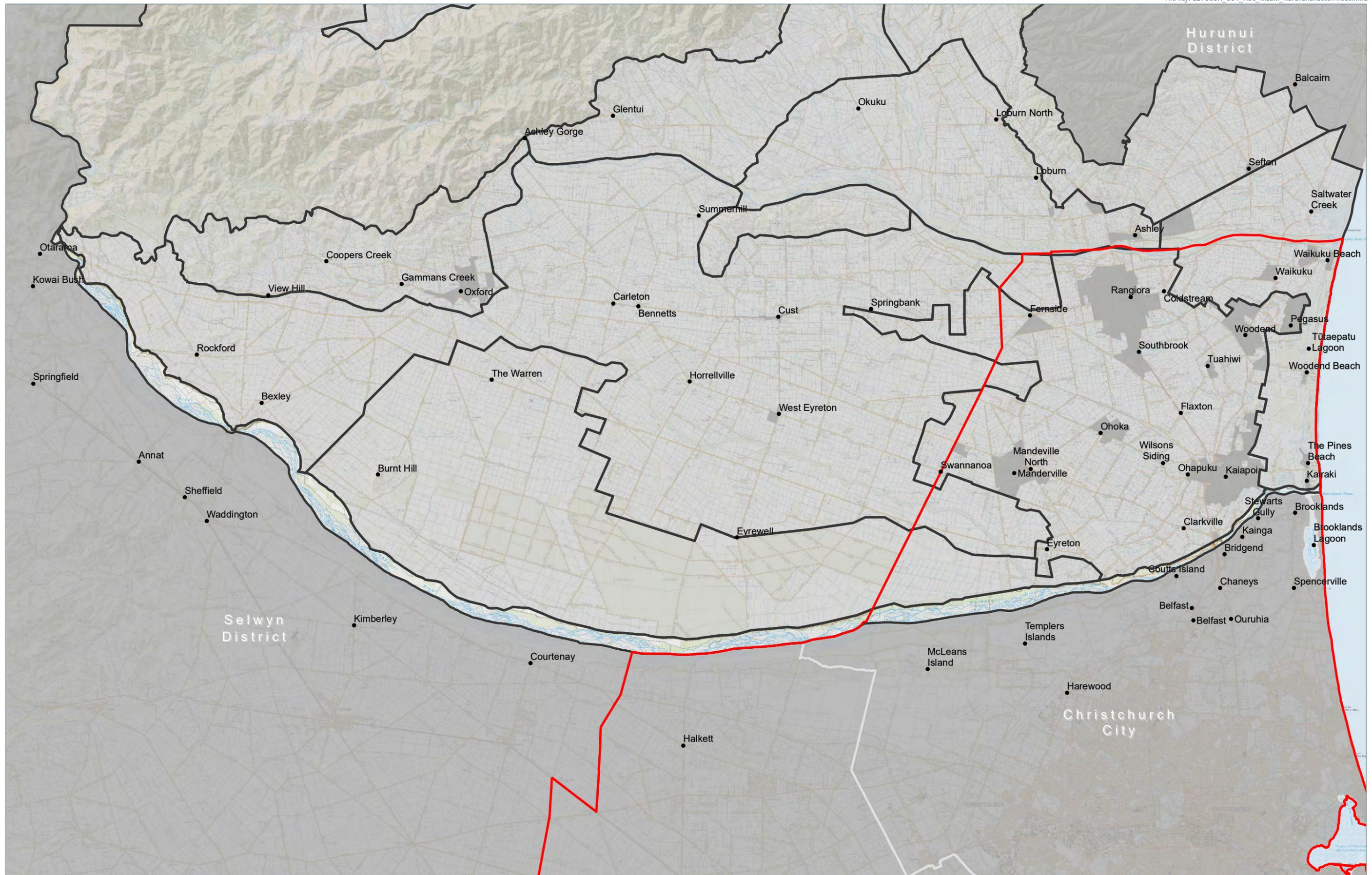
Legend

- Greater Christchurch Boundary
- Non Rural Zones
- Landscape Character Boundary



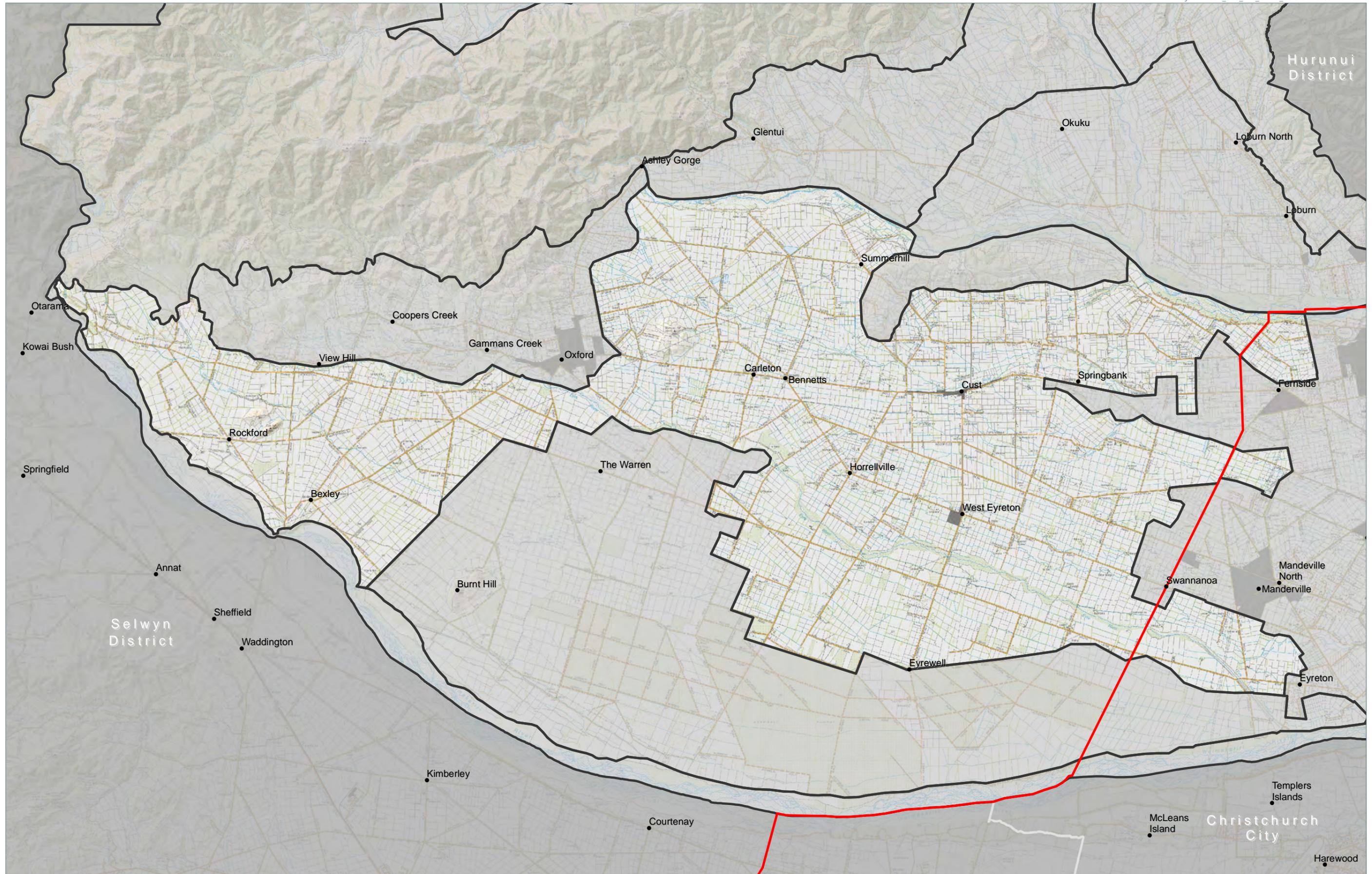
Legend

- Greater Christchurch Boundary
- Non Rural Zones
- Landscape Character Boundary



Legend

-  Greater Christchurch Boundary
-  Non Rural Zones
-  Landscape Character Boundary



Data Sources:
Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

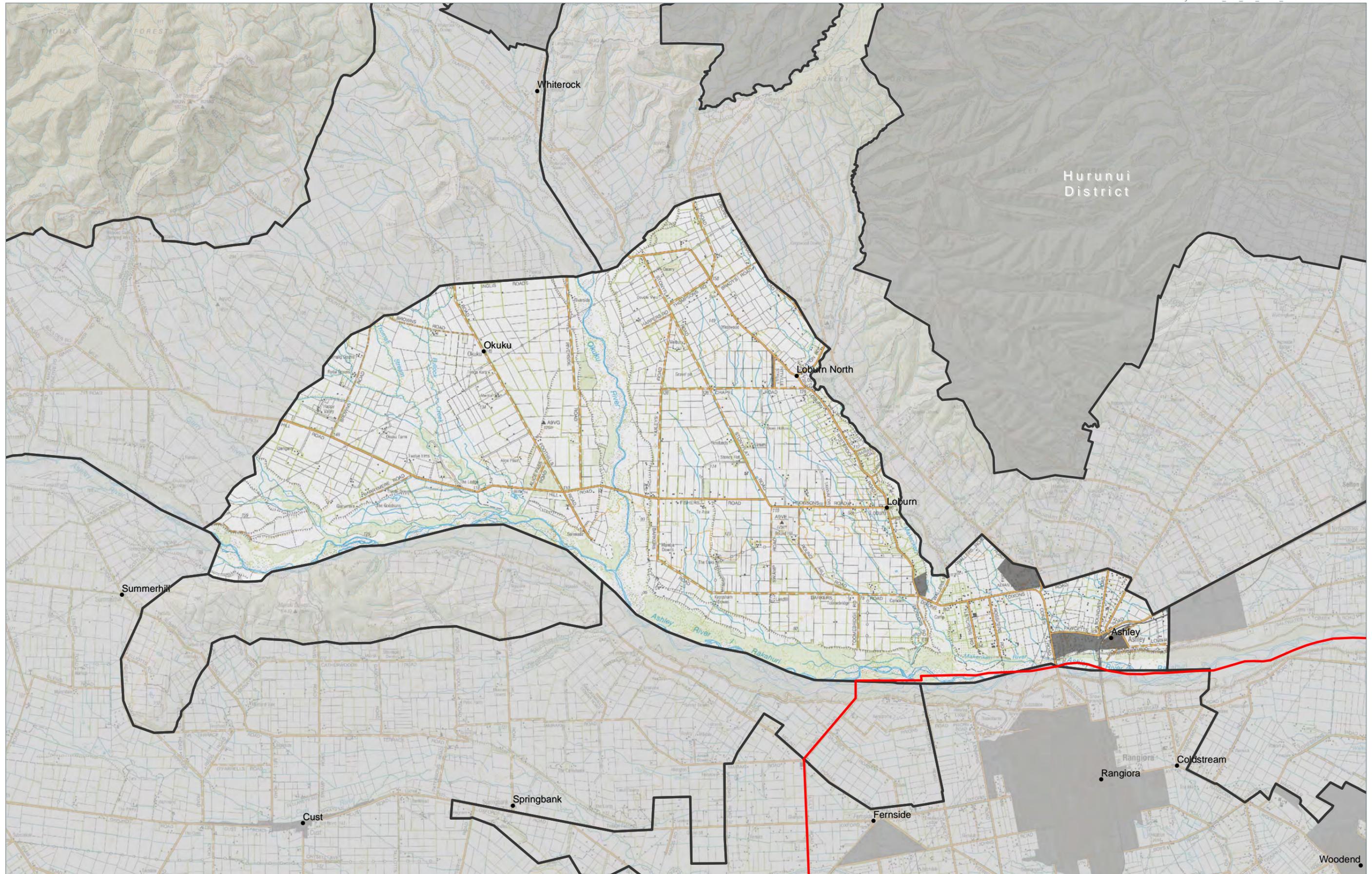
Legend

-  Greater Christchurch Boundary
-  Non Rural Zones
-  Landscape Character Boundary

Waimakariri District Rural Character Study
Figure 8: View Hill Eyrewell Plains Character Area

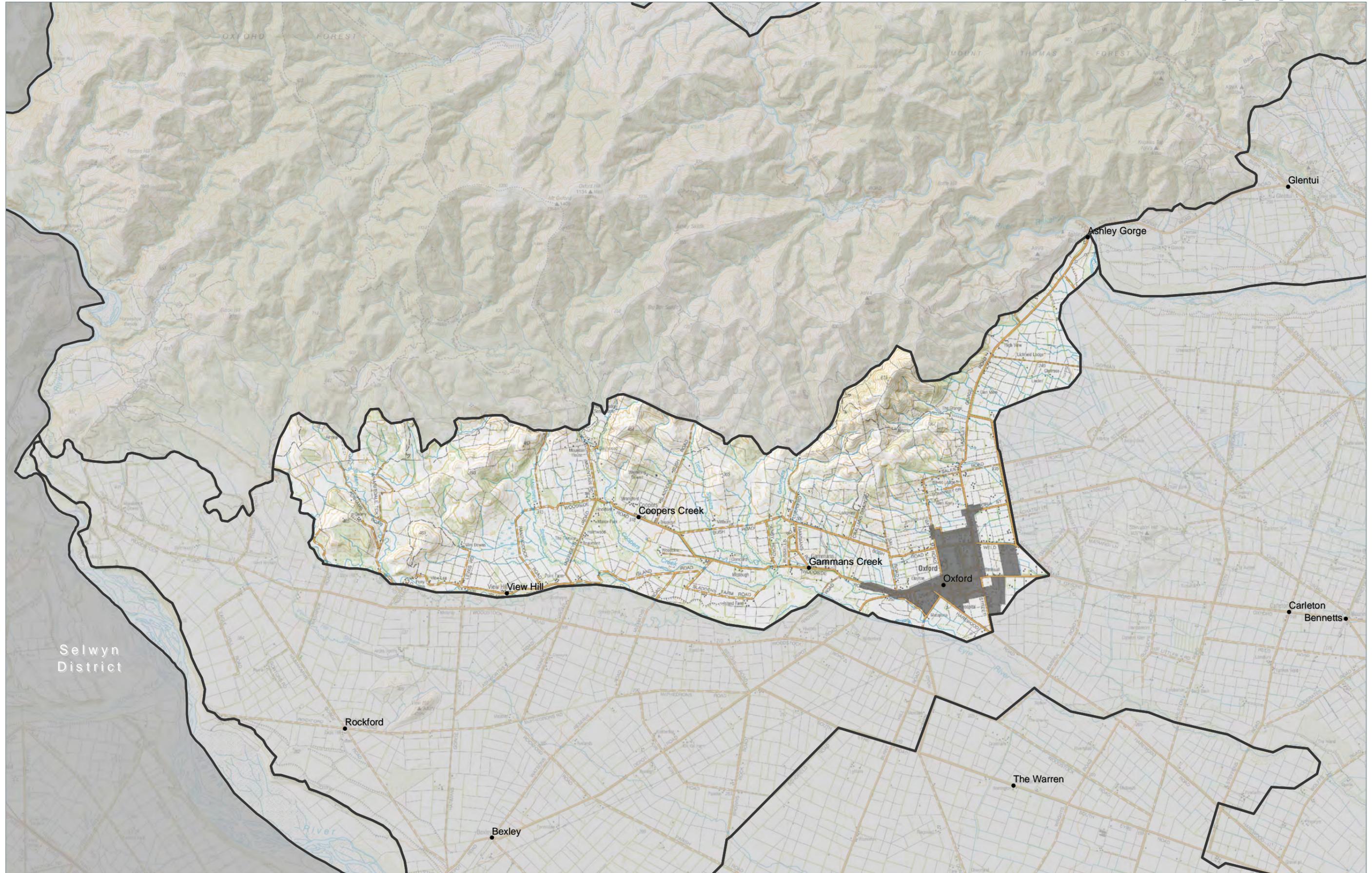
Date: 31 May 2018 | Revision: 0

Plan prepared for WDC by Boffa Miskell Limited
Project Manager: Yvonne.Pflugger@boffamiskell.co.nz | Drawn: BMC | Checked: BFA



Legend

- Greater Christchurch Boundary
- Non Rural Zones
- Landscape Character Boundary

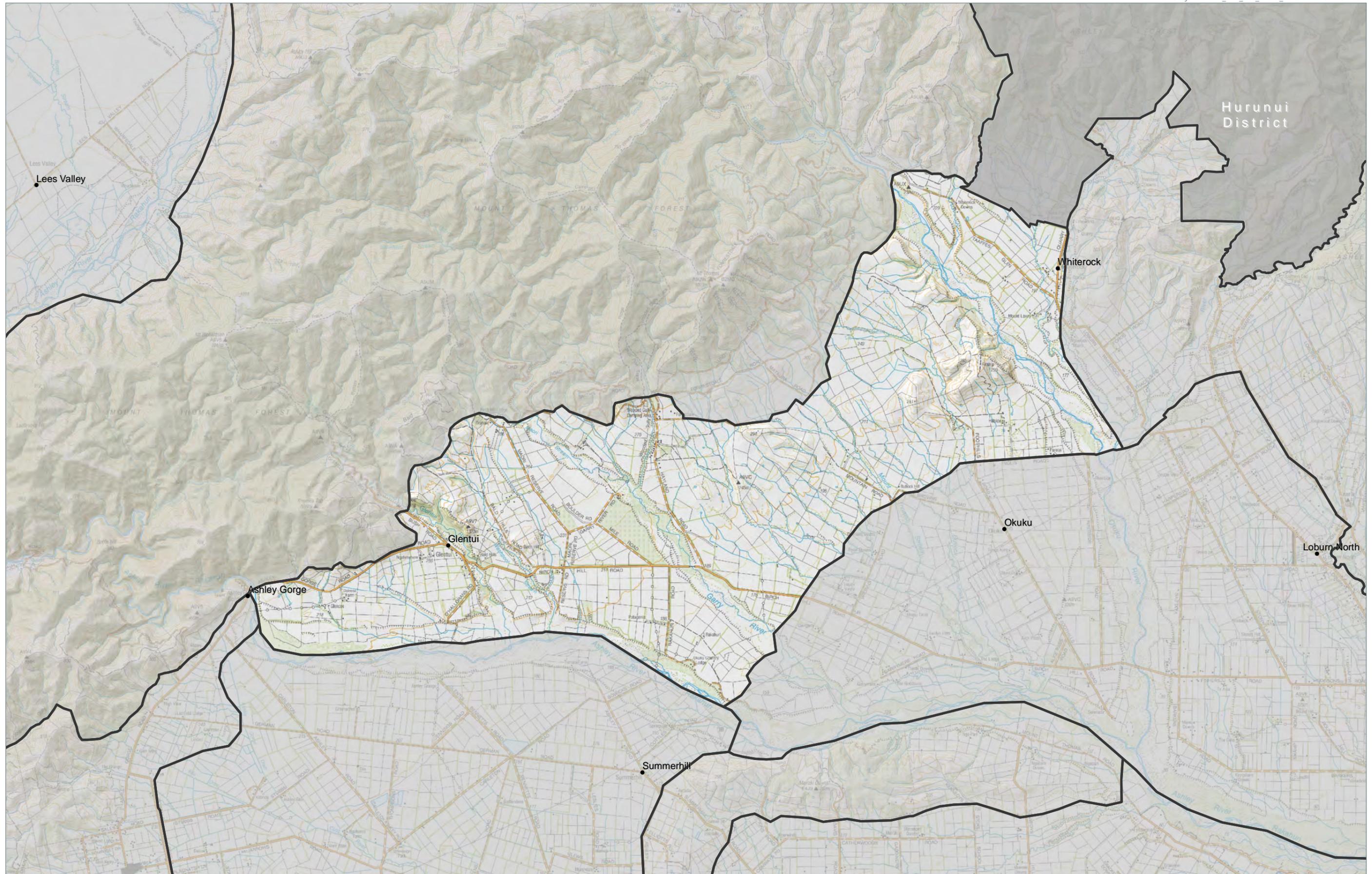


Data Sources:
Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

- Greater Christchurch Boundary
- Non Rural Zones
- Landscape Character Boundary

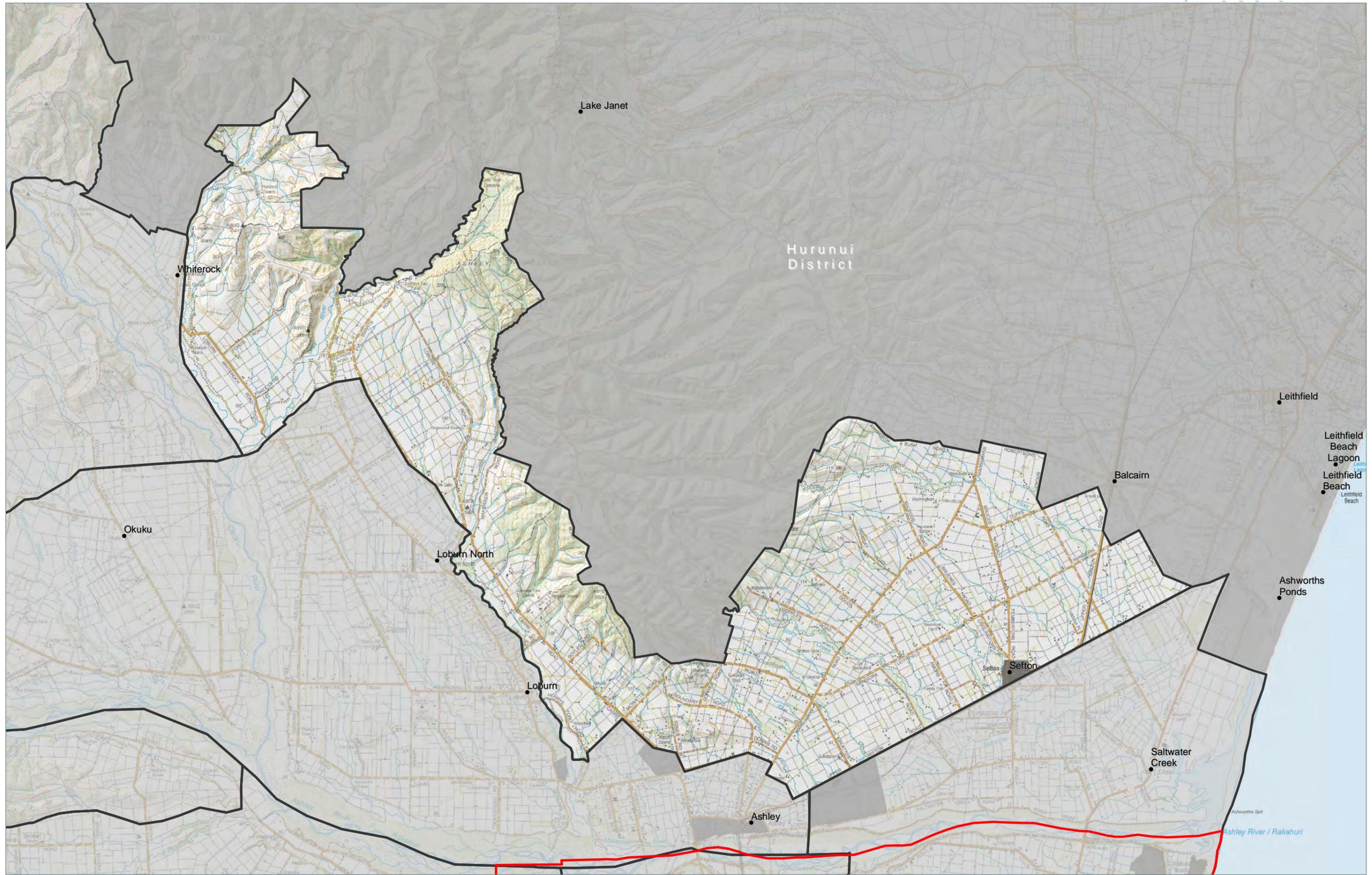


Data Sources:
 Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

-  Greater Christchurch Boundary
-  Non Rural Zones
-  Landscape Character Boundary



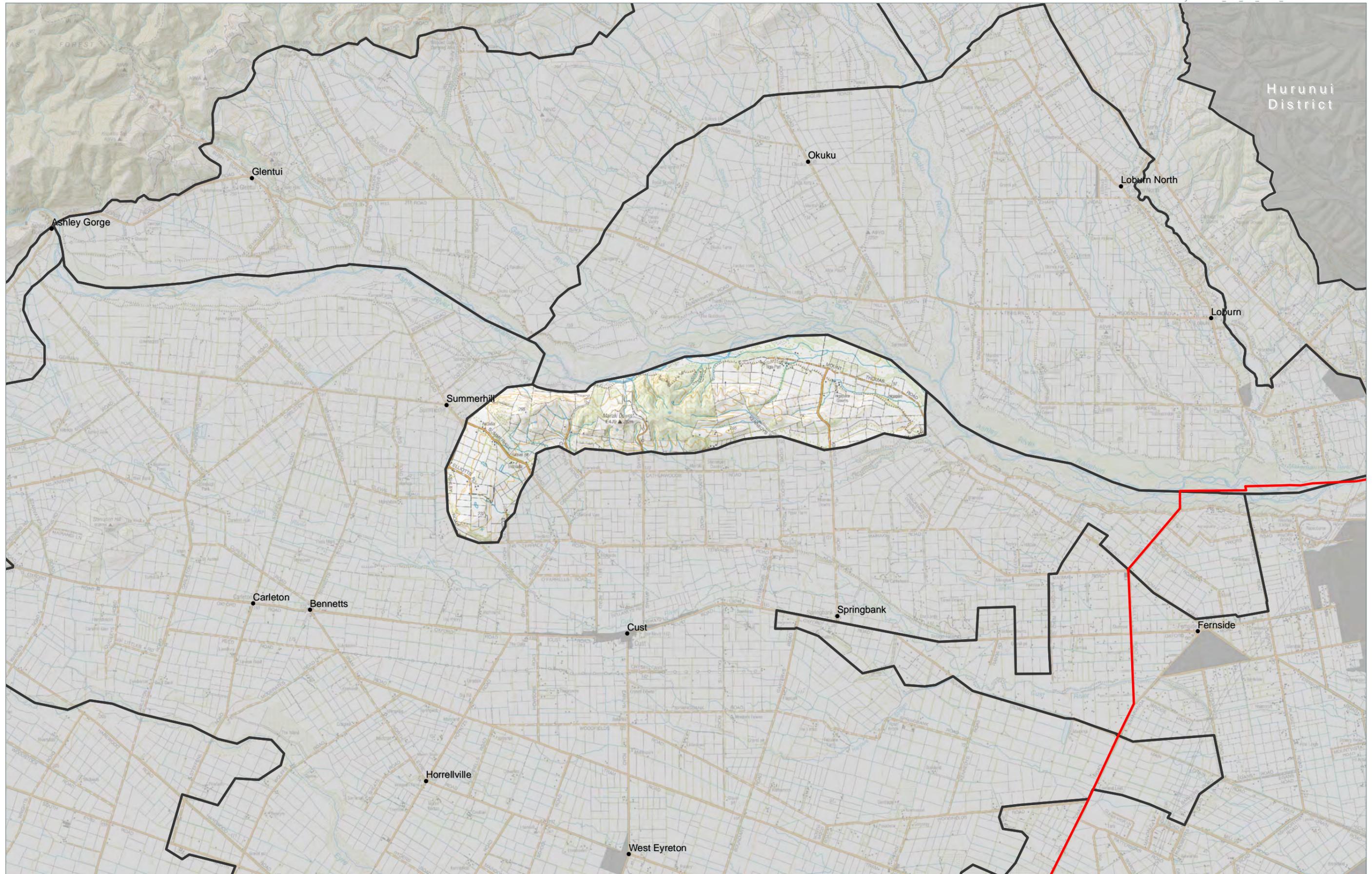
1:75,000 @ A3

Data Sources:
Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

-  Greater Christchurch Boundary
-  Non Rural Zones
-  Landscape Character Boundary

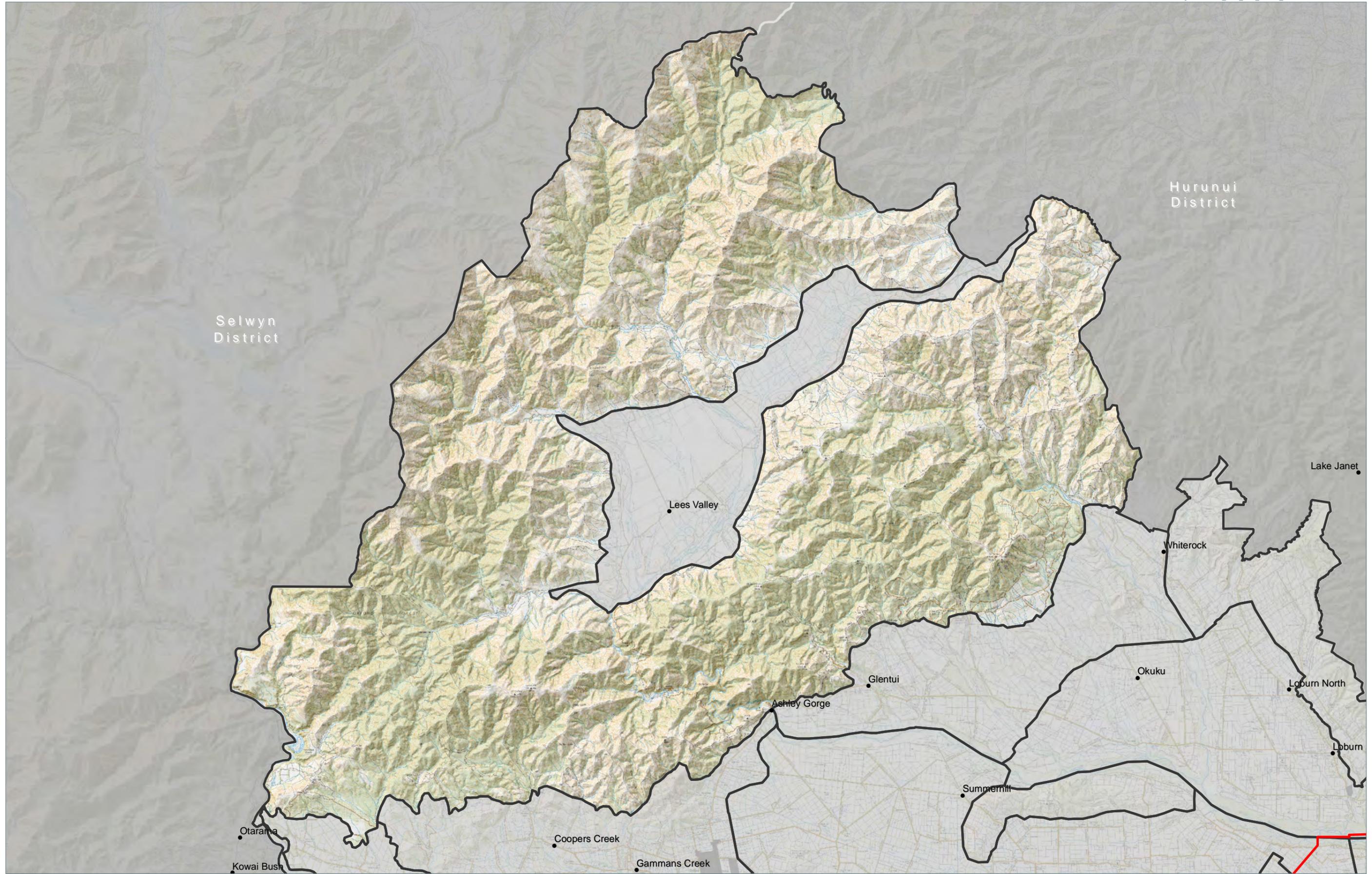


Data Sources:
 Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

-  Greater Christchurch Boundary
-  Non Rural Zones
-  Landscape Character Boundary



Data Sources:
 Topo maps sourced from LINZ topo 50 map series

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

-  Greater Christchurch Boundary
-  Non Rural Zones
-  Landscape Character Boundary

Waimakariri District Rural Character Study
Figure 15: Oxford Puketeraki Hill Country Character Area

Date: 31 May 2018 | Revision: 0

Plan prepared for WDC by Boffa Miskell Limited
 Project Manager: Yvonne.Pfluger@boffamiskell.co.nz | Drawn: BMC | Checked: BFa

Bibliography & References

Christchurch City Council (2015) *Christchurch City Landscape Study*

Environment Canterbury.. (2017). *Second Draft: Terrestrial Natural Character Study of the Canterbury Coastal Environment* (No. C11101_A). Prepared by Boffa Miskell.

Environment Canterbury (2010), *Canterbury Regional Landscape Study Review*

Environment Canterbury (2017), *Draft Marine Natural Character Study of the Canterbury Coastal Environment*

Environment Canterbury Ashley Rakahuri Regional Park Management Plan, ISBN: 978-0-947511-47-0 (Print) ISBN: 978-0-947511-48-7 (Web) R16/32

Environment Canterbury 2013 *Canterbury Regional Policy Statement*

Lynn I.H (1993) *Land Types of the Canterbury Region*. Landcare Research New Zealand, Lucas Associates.

Manawhenua Environmental Services. 2013 *Mahaanui Iwi Management Plan*

Te Rūnanga o Ngāi Tahu. (2018). Kā Huru Manu Ngāi Tahu. Atlas Retrieved April 13, 2018, from <http://www.kahurumanu.co.nz/atlas>

Waimakariri District Council. (n.d.-a). *Waimakariri district plan*. Waimakariri District Council.

Waimakariri District Council. (n.d.-b). *Waimakariri District Plan - Outstanding Landscape Area*.

Waimakariri District Council, 2017, *Draft Our District, Our Future – Waimakariri 2048*

Waimakariri District Council *District Plan Effectiveness Review - Rural Environment Summary*

Websites:

<http://christchurchcitylibraries.com/heritage/publications/richmanpoorman/richardbedwardowen/>

<http://www.doc.govt.nz/parks-and-recreation/places-to-go/canterbury/places/https://blog.doc.govt.nz/2014/09/11/ashley-rakahuri-river/>

<http://www.kahurumanu.co.nz/atlas>

<http://www.waimakariri.govt.nz/your-council/council-documents/district-plan>

http://www.waimakariri.govt.nz/__data/assets/pdf_file/0018/33705/Situation-Analysis-Report-for-Rural-and-Small-Settlement-Areas.pdf

Appendix 1: Land Type Descriptions

From Canterbury Landtypes Lucas Associates/ Ian Lynn

Low Altitude Plains Landscapes

L1 Plains - Coastal Fringe Land Type

Canterbury plains coastal fringe incorporating undulating to rolling coastal beach sand dunes and associated interdune back swamps, sand plains, gravel beach ridges and bars, and saline lake and lagoonal fringe wetlands. Elevation ranges from 0 - 20m and rainfalls from 600 - 800 mm/A. The land type includes the coastal fringe from the Waipara River mouth to Banks Peninsula, the margins of Lake Ellesmere and the coastal fringe north and south of Timaru.

L2 Lower Plains Land Type

Lower Canterbury plains; broad very low angle coalescing outwash fans and associated low terraces of the major rivers (Waimakariri, Rakaia, Rangitata, and the Waitaki Rivers), comprising Pleistocene glacial outwash gravels with variable loess cover, and extensive Holocene alluvium, coastal swamp deposits and minor inland dune belts. Elevation ranges from 0 - 150m, and rainfall from 600 to 800mm/A.

L3 Upper Plains Land Type

Upper Canterbury plains; broad low angle coalescing outwash fans and associated high terraces of the major rivers, and onlap fans, fringing the foothills, comprising Pleistocene glacial outwash gravels with variable loess cover. Holocene alluvium and minor Cretaceous Tertiary inlier hills (eg. Burnt Hill). Elevation 150-600m, rainfall 800 to 1 000 mm/A.

L4 Plains - Recent Floodplains and Low Terraces Land Type

Active, recent, major river floodplains incorporating wide, braided, active and recently active riverbeds, recent floodplain terraces and associated backswamp wetlands. Elevation ranges from 0 to 600 m and rainfall from 600 to 1000 mm/A. The land type includes the lowland sections of the Clarence, Conway, Wairau, Hurunui, Waimakariri, Rakaia, Rangitata, and Waitaki Rivers.

Downland and Foothill Landscapes

L11 Northern Loess Mantled Soft Rock Hills and Downs Land Type

Smooth rounded, rolling to strongly rolling downland landscape developed on loess mantled Cretaceous/Tertiary sedimentary and igneous strata, and early Pleistocene gravels, with minor associated terraces, floodplains and fans. Elevation ranges from 50 to 500m and rainfall from 650 to 1000mm/A. Example areas would include the Cheviot and Waikari Valley districts.

L12 Northern Soft Rock Hills and Downs Land Type

Hill and valley landscapes underlain by Cretaceous/Tertiary sedimentary and igneous strata, and minor associated Torlesse Group rocks; incorporating smooth rounded hill slopes developed on weakly indurated strata, and minor structurally controlled hills, e.g. cuestas and hogbacks; minor 'hard rock' hill slopes developed on Torlesse rocks, and associated terraces, floodplains and fans. Elevation ranges from 50-650m and rainfall from 600 to 1200m/A. Example areas would include the Ashley Forest and the Glenmark districts.

L21 Northern Hard Rock Hills Land Type

Strongly rolling to steep, moderately dissected, stable, low elevation, low land, Torlesse hard rock hill country, with rock outcrop especially on spur and ridge crests, and some soil slipping and minor scree erosion. Lower slopes are predominantly oversown and top dressed but frequently with a high scrub component: matagouri, manuka, some gorse and broom, mixed native scrub in gullies and around rock outcrops, and minor remnant native forest. Upper slopes are predominantly in undeveloped 'native' pasture with scrub. Elevation ranges from 200 to 1400 m, the balance below 1100 m, and rainfall from 650 to 1150 m/A. Typical North Canterbury hard rock foothill terrain, example areas include the Lowry Peaks Range, and the Doctors Hills, with Haldon and/or Hurunui Steepland and Hill soils.

Inter-Montane Range and Basin Landscapes

H1 Major River, Valley Fill Land Type

Recent, major river valley fill, incorporating wide, braided active and recently active riverbeds, recent floodplain terraces, and low angle valley fill fans. Elevation ranges from 300 to 1000 m with rainfalls from 1000 to 6000 mm/A. The land type includes the high country segments of the Clarence, Conway, Wairau, Hurunui, Waimakariri, Rakaia, and Rangitata. Waitaki and Ahuriri River floodplains.

H2 Glacial and Fluvial Valley Floor Land Type

Glacial and fluvial valley flood landforms. outwash terraces, ablation and terminal moraine, lakes, fans, meandering floodplains, back swamps, plateaus and high remnant terraces, and glacial moulded hills and mountains under 1300 m. Elevation ranges from 380 to 1300 m with the balance below 1000 m, and rainfall ranges between 800 and 4800 mm/A. The land type includes the high country sections of the Clarence, Wairau, Hurunui, Waimakariri, Rakaia, Ashburton, Rangitata, Waitaki and Ahuriri River valley floors.

H5 Small Intermontane Basins and Valleys Land Type

Intermediate sized intermontane basin and valleys with extensive gently sloping, alluvial fans, terrace lands, floodplains and wetlands, and associated soft rock Tertiary and hard rock. Elevation ranges from 280 to 620 m and rainfall from 1000 to 1250 mm/A. The degree of agronomic development varies significantly from intensively developed mixed farming to extensive grazing. Example areas include the Hanmer basin and Lees valley.

H9 Northern Eastern Front Range Land Type

Steep to very steep, dissected, , front mountain ranges fringing the upper plains in the north east and rising to 2000 m; minor cirque glaciation although with a distinctive periglacial imprint; extensive scree and bedrock outcrop especially at higher elevations, and sharp crested peaks and relatively smooth flat-topped ridge crests. Deep colluvium and moraine mantles moderately steep to steep rectilinear lower mountain slopes. Elevation ranges from 450 to 2000 m and rainfall between 1200 and 2500 mm/A. Snow tussock, subalpine scrub and alpine and rockfield vegetation features above 1220 m, with an induced short tussock grassland, scrubland, or remnant beech forest cover at lower elevations. The land type includes the Puketeraki, Torlesse and Big Ben Ranges.

Appendix 2: GIS Base Data Maps

List of Figures

Figure A: Study Area

Figure B: Geopreservation Inventory Map

Figure C: Soils Map

Figure D: River Catchments Map

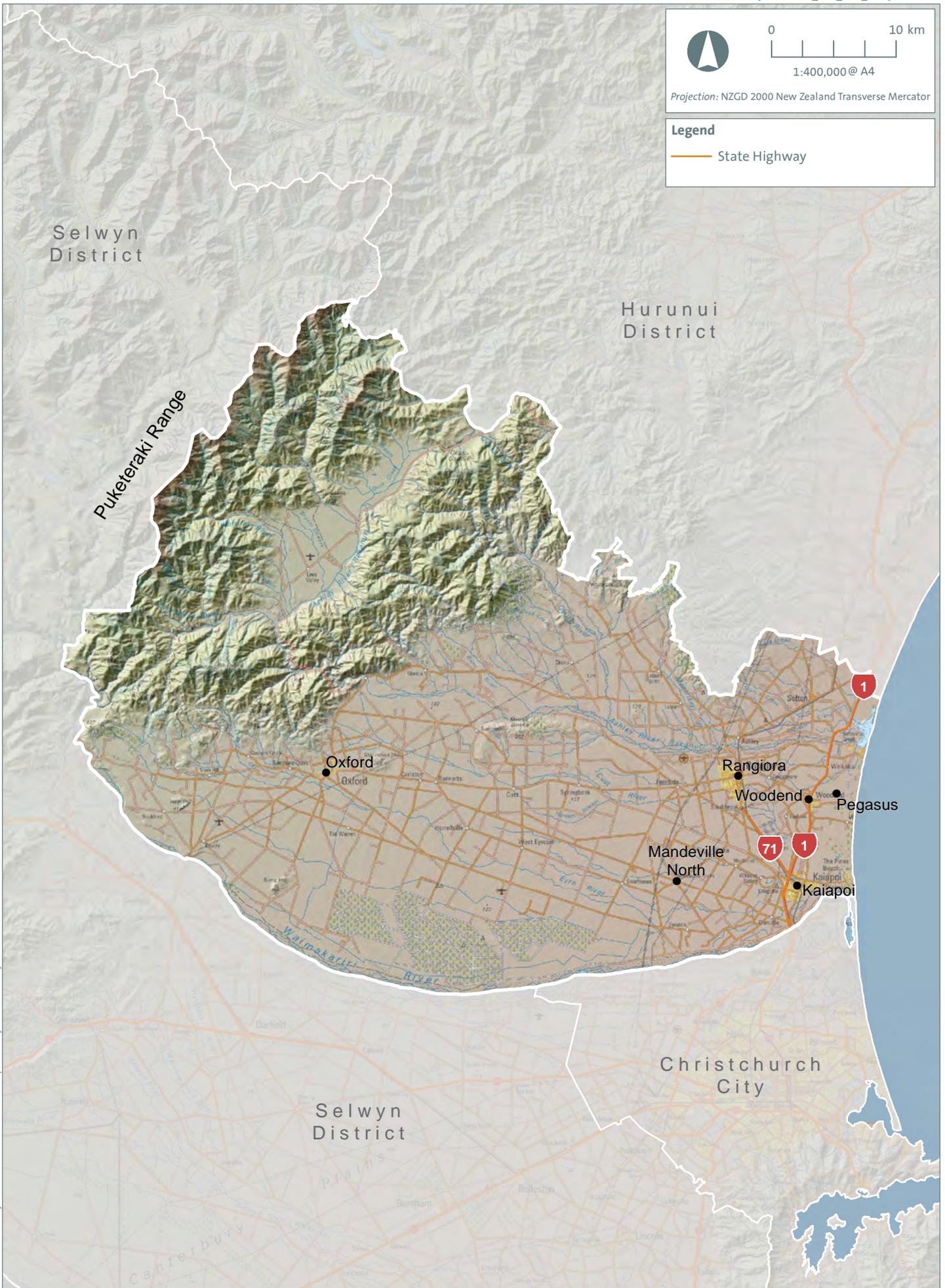
Figure E: Elevation Map

Figure F: Slope Map

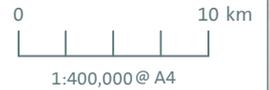
Figure G: Land Use Map

Figure H: Recorded Natural Areas Map

Figure I: Recorded Cultural History Map



This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



1:400,000 @ A4

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

— State Highway

Geopreservation Site*

* Some sites offset for legibility

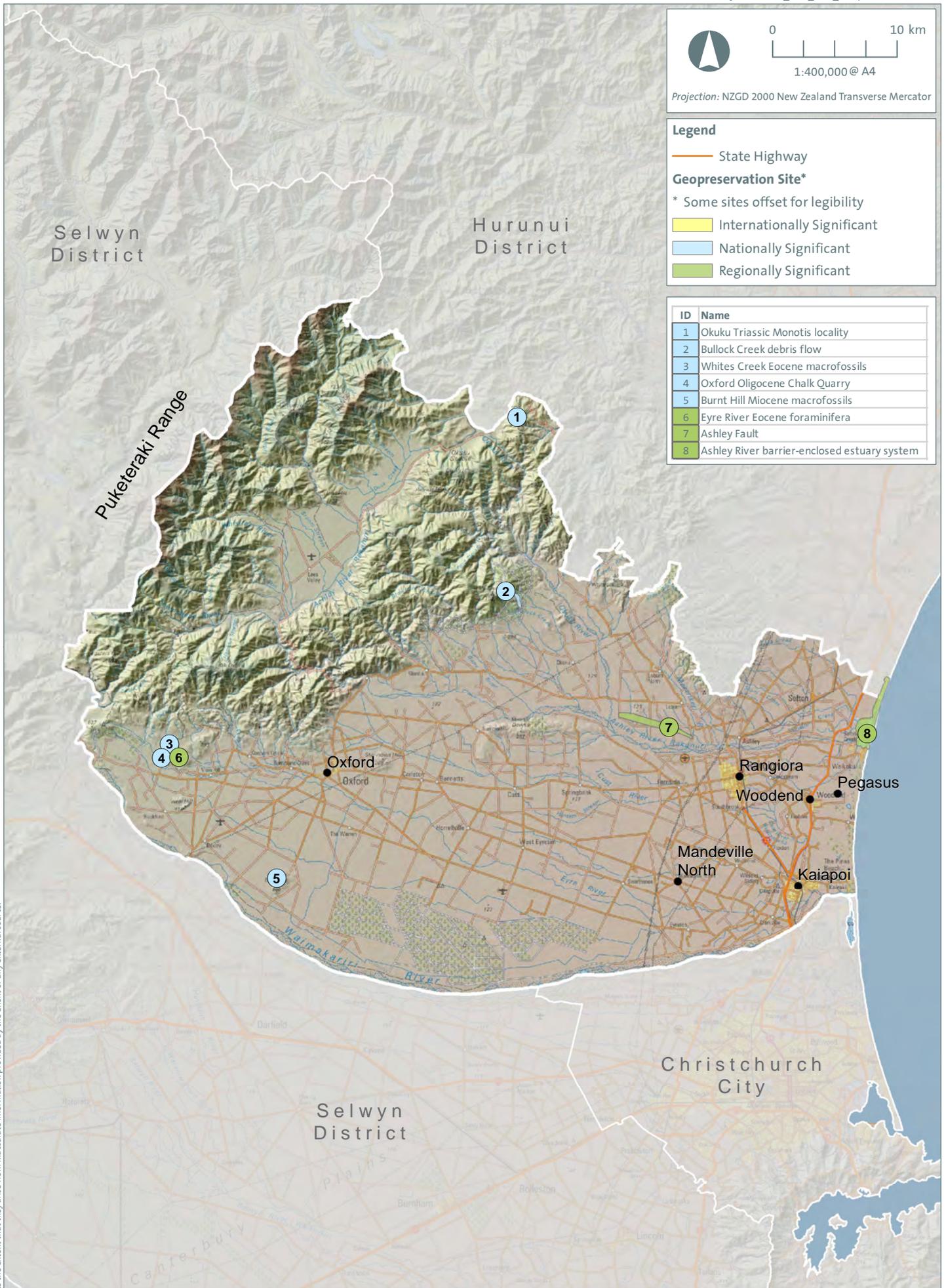
Internationally Significant

Nationally Significant

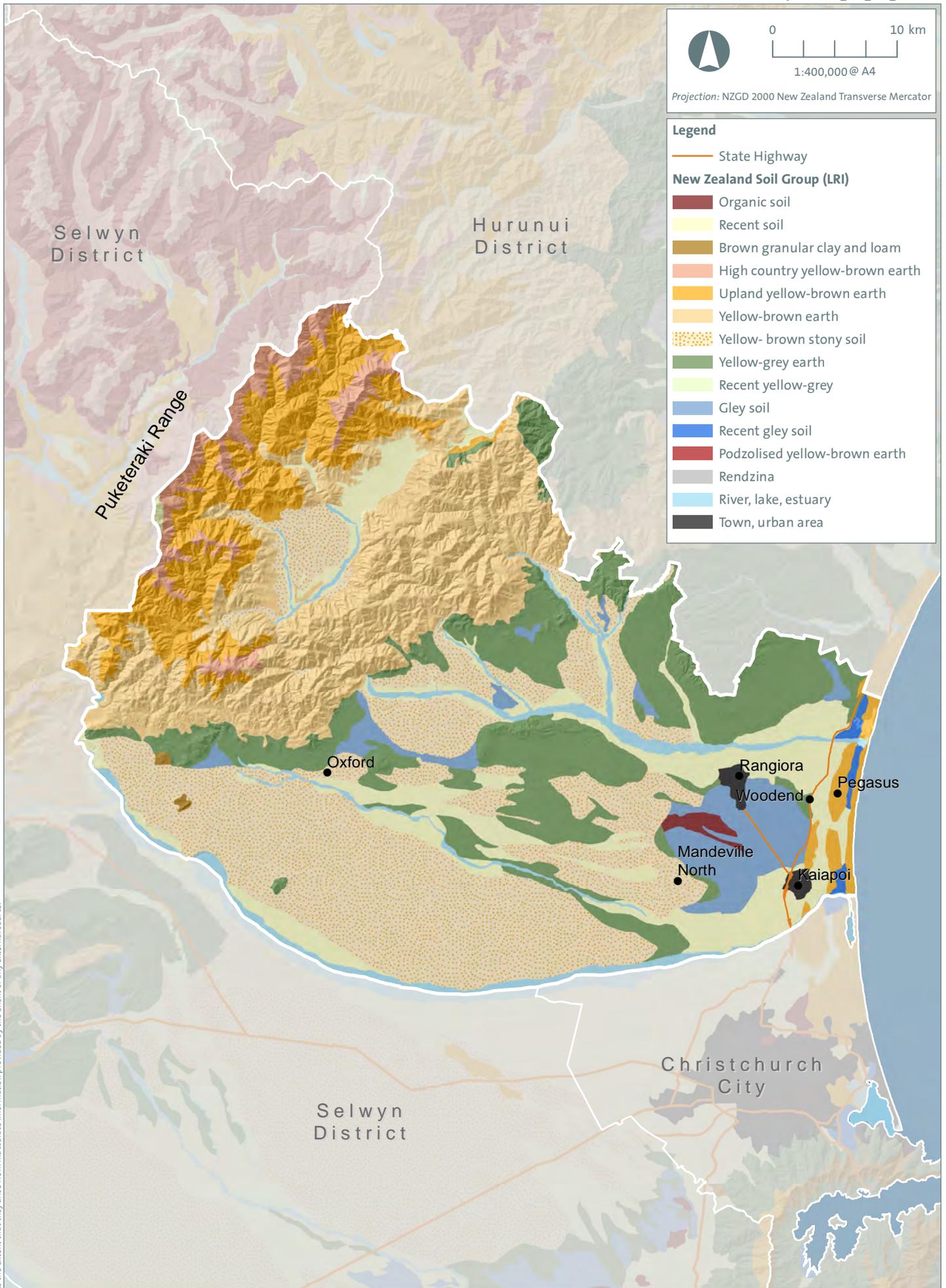
Regionally Significant

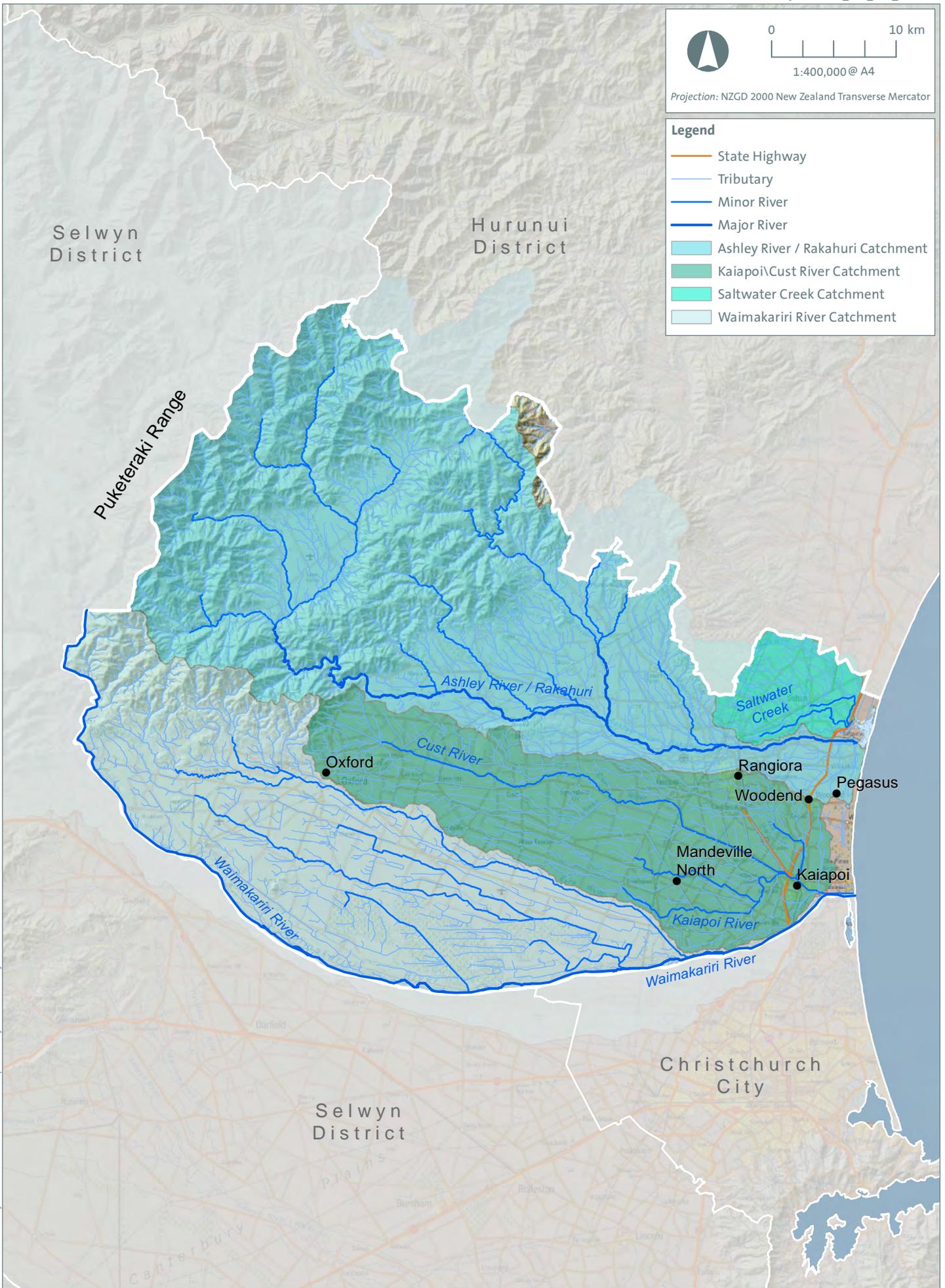
ID	Name
1	Okuku Triassic Monotis locality
2	Bullock Creek debris flow
3	Whites Creek Eocene macrofossils
4	Oxford Oligocene Chalk Quarry
5	Burnt Hill Miocene macrofossils
6	Eyre River Eocene foraminifera
7	Ashley Fault
8	Ashley River barrier-enclosed estuary system

This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.





This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

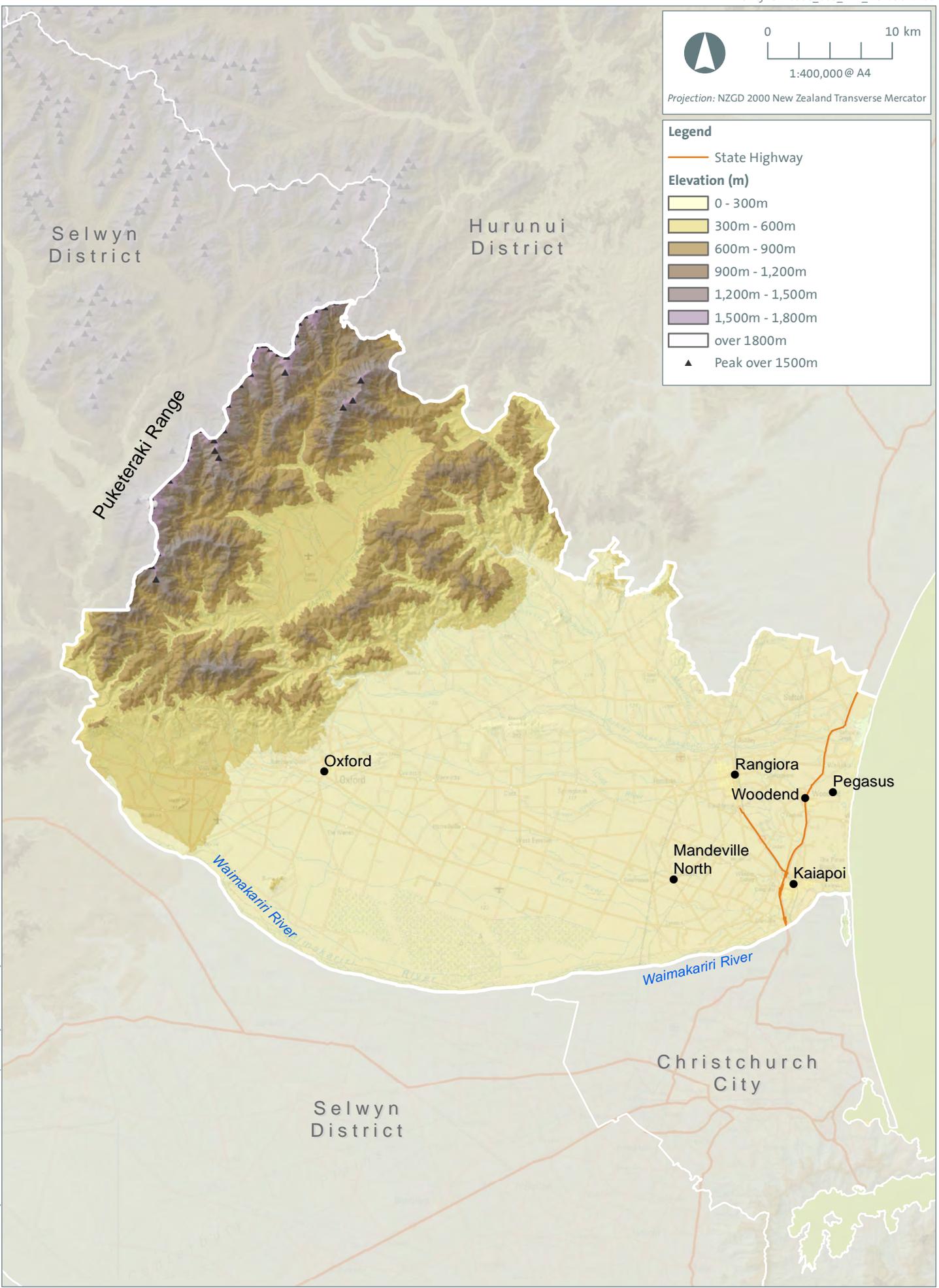
- State Highway

Elevation (m)

	0 - 300m
	300m - 600m
	600m - 900m
	900m - 1,200m
	1,200m - 1,500m
	1,500m - 1,800m
	over 1800m

- ▲ Peak over 1500m

This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.





1:400,000 @ A4

Projection: NZGD 2000 New Zealand Transverse Mercator

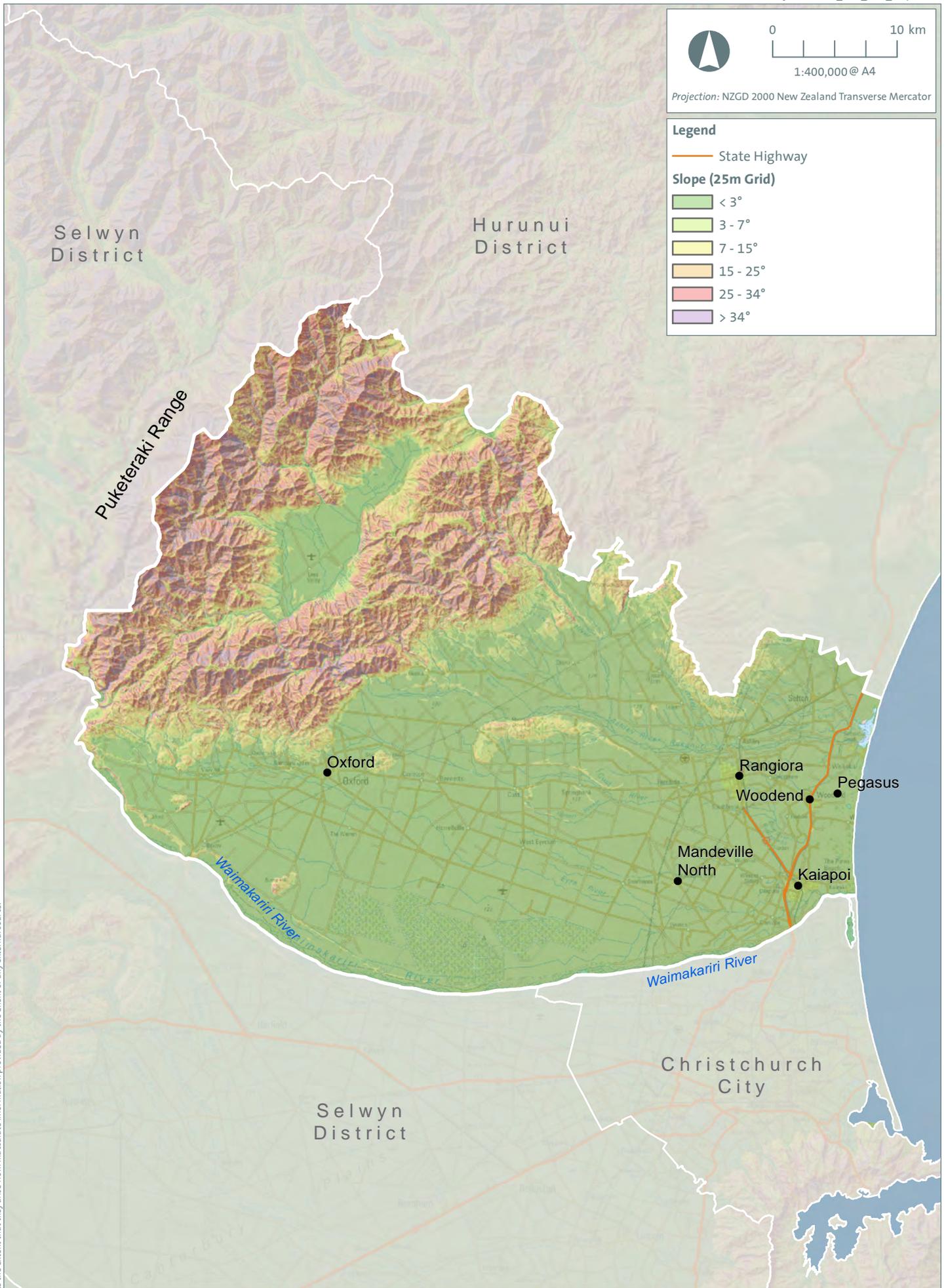
Legend

— State Highway

Slope (25m Grid)

- < 3°
- 3 - 7°
- 7 - 15°
- 15 - 25°
- 25 - 34°
- > 34°

This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

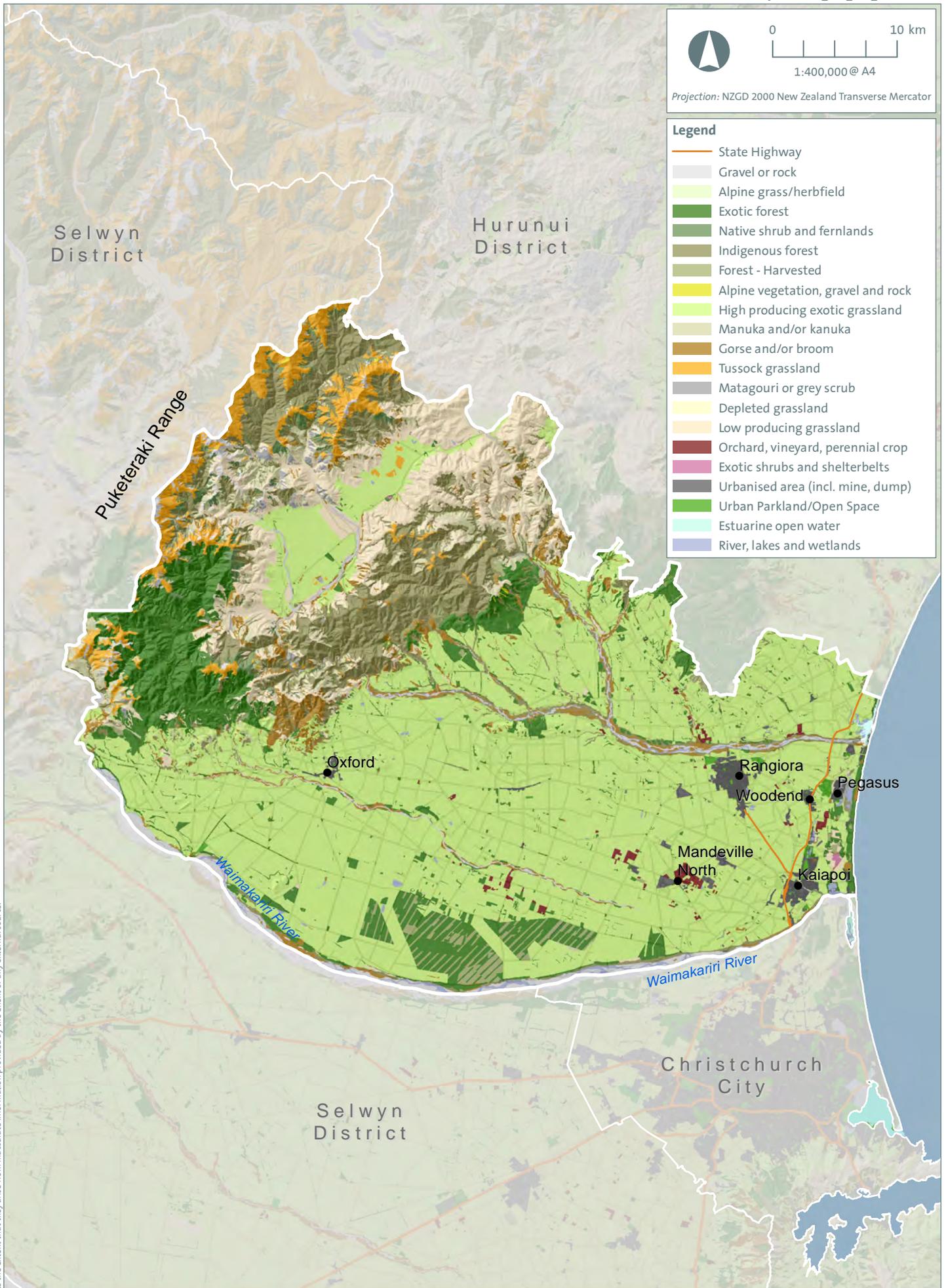




Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

- State Highway
- Gravel or rock
- Alpine grass/herbfield
- Exotic forest
- Native shrub and fernlands
- Indigenous forest
- Forest - Harvested
- Alpine vegetation, gravel and rock
- High producing exotic grassland
- Manuka and/or kanuka
- Gorse and/or broom
- Tussock grassland
- Matagouri or grey scrub
- Depleted grassland
- Low producing grassland
- Orchard, vineyard, perennial crop
- Exotic shrubs and shelterbelts
- Urbanised area (incl. mine, dump)
- Urban Parkland/Open Space
- Estuarine open water
- River, lakes and wetlands



This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



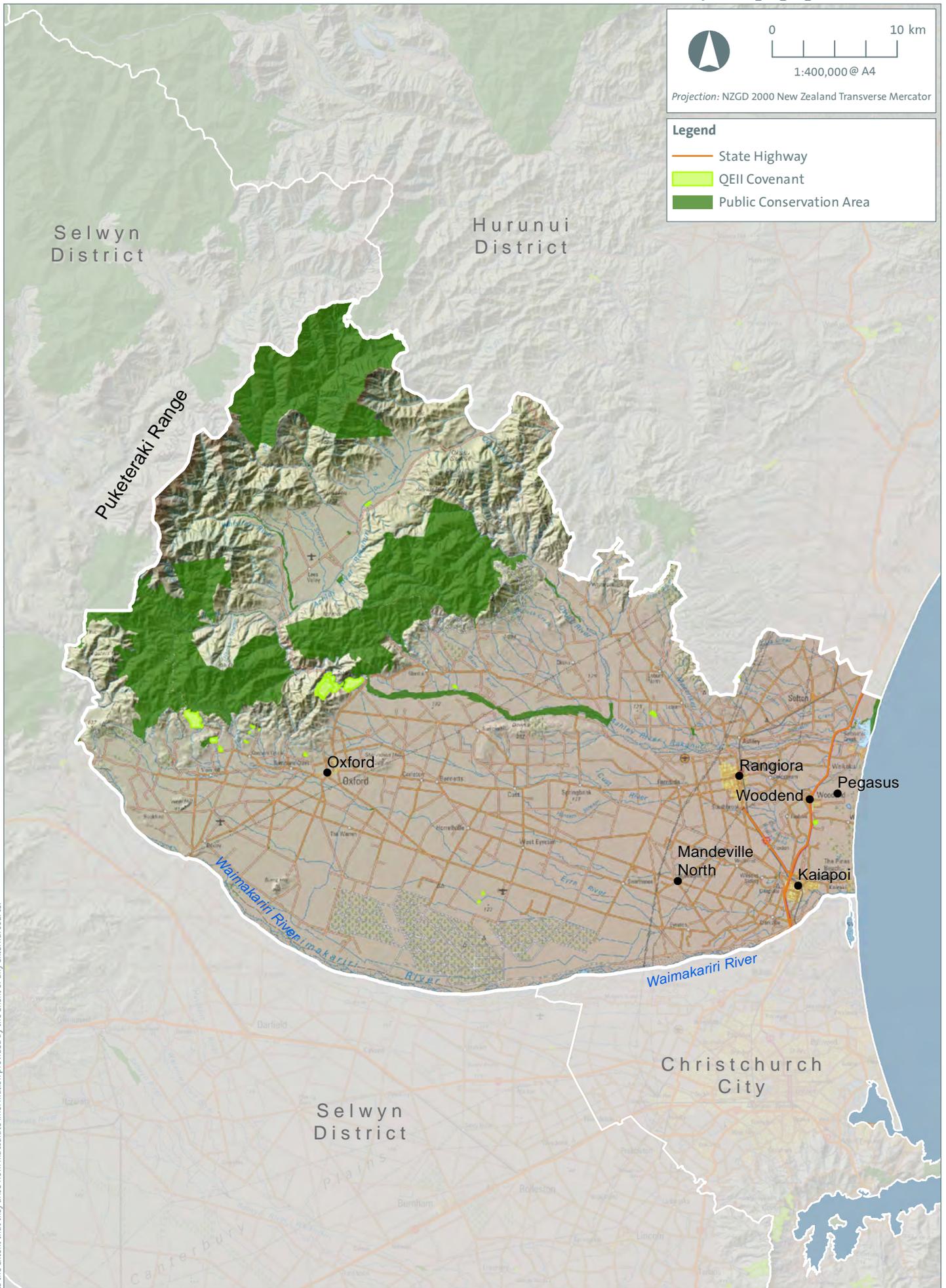
1:400,000 @ A4

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

-  State Highway
-  QEII Covenant
-  Public Conservation Area

This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

