Variation 1 to the Proposed Land and Water Regional Plan

Section 42A Report

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This report represents advice to Environment Canterbury and any views, conclusions or recommendations do not represent Council policy.

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Overview

1.1 The Selwyn Waihora catchment drains the flanks of the Southern Alps west of Christchurch and flows east to Lake Ellesmere/Te Waihora, a coastal lake which discharges into the South Pacific Ocean. Two alpine rivers set the hydrologic border of the catchment; the Waimakariri to the north and the Rakaia River from the south. The Selwyn Te Waihora catchment has an area of 272, 000 hectares of which 30,000 ha (11%) is hill country and 210,000 (77%) lies in flat terrain. The balance of the land area comprises of Lake Te Waihora and urban areas.

1.2 The rivers and streams in the upper part of the catchment flow down from the hills and are mainly driven by overland flow and shallow sub-surface flow[1]. These waterways rapidly lose water to the ground as they flow over the plains and naturally go dry in places. The only river that spans the plain is the Selwyn River, however the upper and the lower reaches of the river only 'connect' during high flow events, which occur infrequently.

1.3 The Selwyn District is the fastest growing district in New Zealand. The population grew significantly between 1996 and 2006, at more than three times the national rate, and 2011 estimates indicate this growth has continued. This expansion coincides with the increased land use intensity and agricultural expansion. Agriculture covers about 88 percent (240,000 ha) of the land in the area and is a significant part of the local economy. Approximately 105,000ha of land in the catchment is irrigated. Further irrigation (30,000 ha) is proposed through the development of the Central Plains Water Irrigation Scheme.

1.4 Three-quarters of the district population reside in service towns and smaller townships where 70 percent are reliant on community water supply. A major industrial and business park (IZone) has developed west of Rolleston and contains a mix of activities including agricultural servicing and milk-product processing. These industrial developments as well as tourism, commercial fisheries and water based recreation, are heavily dependent on water for their sustainability.

Climate and Climate Change

1.5 The location of the Selwyn Te Waihora catchment is between the Southern Alps (to the west) and the Mid Canterbury coast (to the east), which lends to the seasons being quite variable. Climate data indicates that the area has between 1,900 and 2,100 bright sunshine hours a year and a mean annual air temperature of approximately 12 degrees celsius. The district is drier and sunnier than most parts of New Zealand, with long drought spells occurring in summer. The number of frosts and rainfall in the winter has been decreasing; however, south-westerlies remain common during the winter months. Climate in the area can vary considerably within a few kilometres due to the number of microclimates in the Canterbury Region.

[1] Section 6 - Technical Report Overview.

1.6 Climate change is a concern in the area as overall projections indicate that the Canterbury region will experience increasing rainfall in the ranges, and less rainfall on the plains. This has particular significance for groundwater recharge and foothills-fed rivers such as the Selwyn River/Waikirikiri. Although the increase in temperatures would likely lessen the amount of winter snow cover, warmer air holds more moisture, and during winter this could be precipitated as snow at high elevations. Warming still has the potential to result in increased winter snowfall, although the duration of seasonal snow could be shortened and snowlines could rise. Greater precipitation is projected to fall as rain in the alpine rivers, including more extreme events. The less predictable rainfall combined with higher summer temperatures and increased evapo-transpiration would lead to higher irrigation demand and potential increased pressure on ground water and the Selwyn River/Waikirikiri.

Landform, Geology and Land Cover

1.7 The Selwyn Te Waihora catchment has an area of 272, 000 ha and comprises of two distinct regions: the plains (210,000 (77%) lies in flat terrain) and the high country (30,000 ha (11%). The high country is a sparsely-populated region, mainly consisting of hill and mountain ranges and narrow river valleys. Most of the high country is grassland, including some tussocklands and small areas of native forest. The plains is where most of the population live and form an expanse of low-lying, flat, and comparatively dry grassland. The Selwyn River flows from the hills through the plains. Tributaries of the Selwyn River include the Waiāniwaniwa River, the Hororata River and the Hawkins River.

1.8 The extreme south-east is dominated by Lake Ellesmere (Te Waihora) formed by the out-flow of the Selwyn River. Lake Ellesmere is also fed from streams that flow from Banks Peninsula, which by contrast has volcanic geology, erodible loess soils, short steep catchments and moderate intensity of land use on the flat.

1.9 Farming is the predominant land use with agriculture covering approximately 88 percent (240,000 ha) of the land area in the catchment. The plains area is primarily used for sheep and beef (38 % of land use), dairy (19 %), arable (12 %), dairy support (9 %), there is also some exotic forestry (4 %) and deer (3%) (Lilburne, L. 2014). About 82 % of the properties by number in the catchment are less than 50 ha, and a very large number of these are lifestyle blocks.

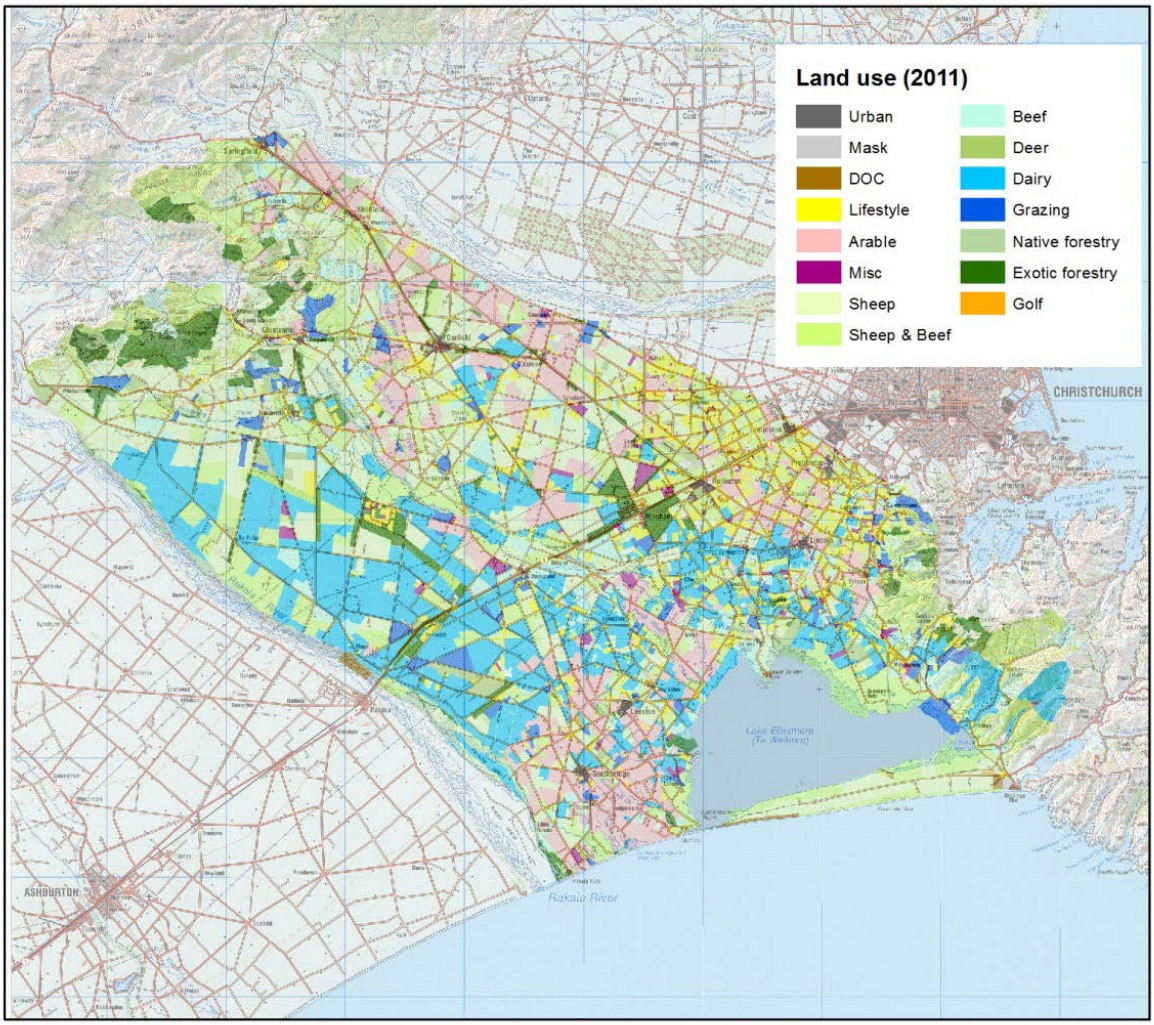


Figure 1 Current (Dominant) Land Use in the Selwyn Te Waihora Catchment

1.10 Irrigation is a feature of the catchment, sourced primarily from groundwater. Approximately 105,000 ha of land is irrigated. Irrigation has expanded since the 1970s for arable farming and horticulture in the first instance and in recent years to support the expansion of dairying. Between 2002 and 2012, dairy cattle numbers have increased in the district to 199,014 animals or approximately 17 percent of the regional dairy herd of 1,200,000 animals. As a result of dairy expansion in the region, forage production is increasing and many farms have diversified into dairy support. The Central Plains Water Irrigation Scheme will result in an additional 30,000 ha of new irrigated land in the catchment.

Water Resources

1.11 The Selwyn Waihora Zone is hydrologically diverse as it is characterised by large alpine rivers, central plains, hill fed rivers, significant groundwater resources, spring-fed streams and Te Waihora/Lake Ellesmere, a large barrier-beach built coastal lagoon classified as a wetland of international significance and highly prized by Ngāi Tahu. The Rakaia/Selwyn and Selwyn/Waimakariri groundwater zones are within the Selwyn Te Waihora Zone.

1.12 The catchment receives recharge from the upper hill sub-catchments, the alpine rivers (Waimakariri and Rakaia Rivers) and land surface recharge within the catchment boundary. The catchment discharges surface water through the many lowland streams to Te Waihora. The streams nearer the alpine rivers have higher baseflows than those far from them (mid-plains) which may be due to the influence of the alpine river recharge.

1.13 The surface water abstraction in the catchment provides for less than 5% of the irrigated area and approximately 5% of the allocated volume. The remainder is supplied by groundwater abstraction with differing degrees of connection to the streams. Currently the catchment is managed as two groundwater allocation zones (the Rakaia-Selwyn and Selwyn-Waimakariri zones) both of which have actual allocations greater than their respective allocation limits in the Natural Resource Regional Plan (NRRP) and proposed Land and Water Regional Plan (pLWRP).

1.14 Water quality and quantity in the catchment is highly inter-related with current land use, water quality, water allocation and flows all having indirect effects on each other.

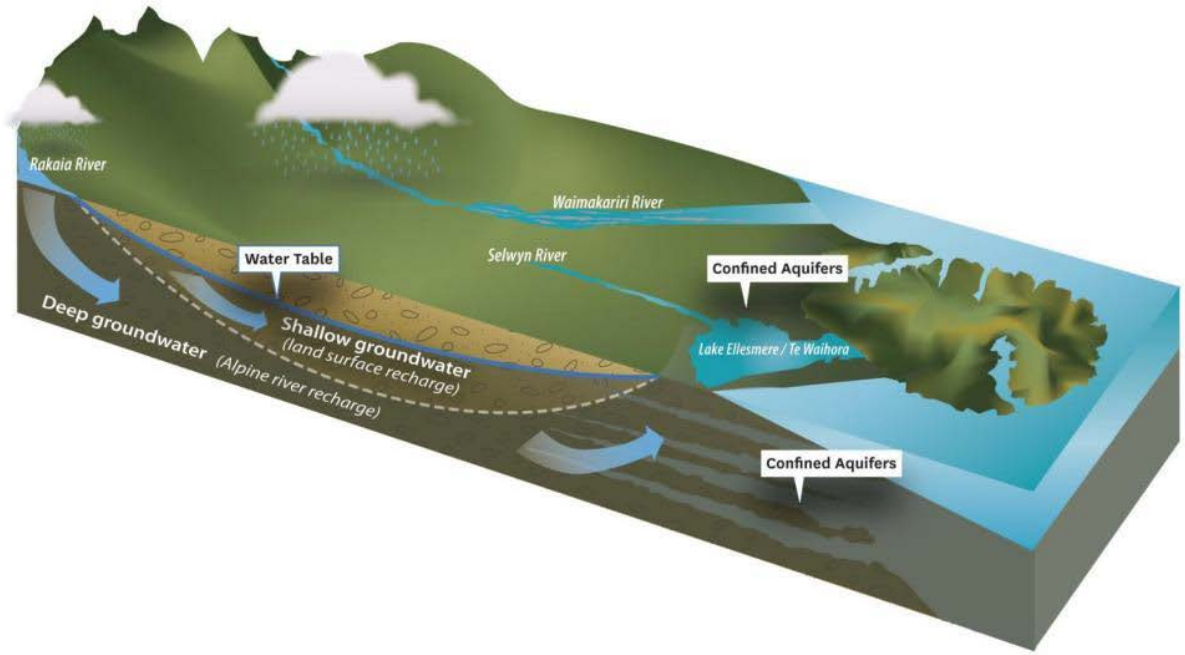


Figure 1 A schematic diagram of the Selwyn Waihora catchment.

Surface Water

Upper Catchment Waterways

1.15 The rivers and streams in the upper part of the catchment flow down from the hills and are mainly driven by overland flow and shallow sub-surface flow. The hill and upland plains area contains the springs, wetlands and streams of the Malvern Hills and Hororata Plains feeding into the Waiāniwaniwa, Hawkins, Hororata and Selwyn Rivers/Waikirikiri. These are of varying size draining diverse geologies and landforms. Remnant wetlands exist along the valleys and at the toe of the foothills with more extensive wetlands in the upper slopes and summits of the foothills.

1.16 There is limited abstraction from the upper catchment waterways. Water quality is good and algal levels are within previous planning regime targets. In the Waiāniwaniwa and Hawkins, nitrate levels are higher and filamentous algal levels are also higher than desirable.

1.17 A stock water-race network runs through the upper and lower plains which began operation over 120 years ago. At a total distance of 638 km^2, this provides reliable water for agricultural use. As well as supporting agricultural activities, over the years of operation there has been a gain in amenity and biodiversity values, including mudfish habitat and bird life, while also providing urban street and rural visual amenity.

Selwyn River/Waikirikiri

1.18 The headwaters of the Selwyn River/Waikirikiri begin in the Rockwood Range and flow east for 80 kilometres across the Canterbury Plains before emptying into Te Waihora. The mainstem is very seasonal and is fed from two sources; from rain in the foothills and small springs in the lower plains. It is high and flood-prone in winter and early spring, but low during summer. In the foothills, the Selwyn flows year-round. On the plains, the riverbed is highly permeable, and as soon as it reaches the plains, water is lost into the aquifers. There is evidence that the reach of the river which dries entirely, has been extending in distance and duration over recent decades.

Flow information for the Selwyn River based on the Coes Ford flow record:
Mean Annual Flow: 2939 l/s
Median Flow: 1071 l/s
7 Day Mean Annual Low Flow: 500 l/s
Annual Volume: 92 cubic metres

1.19 Current rates of abstraction have resulted in moderate to large reductions in flow permanence (11 to 27 percent) over at least 12km of the Selwyn River/Waikirikiri. There have been no surface water allocation limits set specifically for the streams, rivers and drains

[2] http://www.selwyn.govt.nz/council/plans/5waters-activity-management-plan

in the catchment in the past. Previous work has shown that not all of the allocation is used in the catchment (Williams 2010); 40-60% of the allocated volume is used in an average year.

1.20 Water quality in the Selwyn River is good in the headwaters; however suitability for recreation decreases in the lower reaches of the river. Streams and groundwater that recharges the lower section of the catchment contribute higher nitrogen loads. Upstream of Te Waihora shallow groundwater rises back to the surface and the Selwyn flows again making the lower reaches popular for swimming, camping and picnicking. The river is an important mahinga kai trail for hapū at Te Waihora.

Lowland Streams/Banks Peninsula Streams

1.21 The lowlands of the catchment consist of spring-fed streams on the lower plains, and ephemeral streams of southern Banks Peninsula. Seasonal fluctuations of groundwater are generally small due to rainfall recharge, the flows of the Rakaia River and Selwyn River/Waikirikiri, water abstraction and irrigation recharge.

1.22 Over recent decades, however, flows in many of the lowland streams have declined, in some cases significantly. This is due to long-term effects of abstraction and long term climate variability. Most of the surface water takes in the catchment are from the spring-fed streams in the lower catchment. Spring-fed streams are often characterised by the variable management practices around them.

1.23 The majority of the lowland streams have moderate to high levels of phosphorus, and elevated levels of nitrates, which means that some aquatic species will not prosper in the streams and nitrate dominant species will dominate. About half of the monitoring sites show an increase in nitrogen over the last 10-20 years.

1.24 The lowland streams are highly prized by all cultures for the aesthetic, recreation, and food gathering they provide. The Halswell and Irwell Rivers, and the Waikekewai and Harts Creeks are important habitat for native fish and invertebrates. Remnant wetlands in these highly modified lower plains land environments can still support native locally-rare plant communities. Muriwai/Coopers Lagoon to the south of Te Waihora has significant salt marsh and bird habitat and is of significant cultural value to Ngāi Tahu.

The Drainage Network

1.25 There is an extensive drainage network in the catchment that was developed in the 1850s to drain land that was converted from wetland or swamp to what is now productive farm land. This network is located on private land or on council road reserve, and takes stormwater and helps to reduce flooding on the plains. Ten classified drainage districts, manage the almost 500 km of drains, many of which are located in the Lincoln/Leeston area. The Halswell River is included in this drainage network as well as the extensive network of private drains that connect to the publicly managed drains. These drains include some important areas of

lowland habitat and provide an opportunity to improve lowland and wetland biodiversity and habitat, while still retaining their primary function.

Te Waihora/Lake Ellesmere

1.26 Thousands of years ago Te Waihora was the estuary of the Waimakariri and Rakaia Rivers. It is a brackish, shallow lagoon of around 20,000 hectares, averaging a depth of 1.4m. It is New Zealand's fifth largest lake. It is influenced by wind and around 40 key inflows: groundwater directly and surface water from spring fed streams, the Selwyn River, the drainage network, and Banks Peninsula streams. The lake is characterised by cloudy, brown/green coloured water and is highly enriched with nutrients with a current Trophic Level Index (TLI) of 6.8 (classified as hypertrophic). The lake is also highly turbid, mainly due to sediment re-suspension by wind that helps to limit algae growth. Te Waihora varies in salinity as it is opened periodically to the sea in accordance with the Te Waihora/Lake Ellesmere Water Conservation Order. Macrophyte beds around the lake have been absent since the Wahine storm in 1968.

Groundwater

1.27 The groundwater resource is derived from river recharge and land surface recharge. River recharge flows downward into the deeper parts of the groundwater system, then flows upward again as it approaches the coast (Figure 1). Land surface recharge stays in the shallower parts of the groundwater system (Hanson and Abraham, 2009). The groundwater discharges to the spring-fed streams on the lower plains, and to the sea floor via offshore groundwater flow. In addition, a significant amount of groundwater is abstracted for irrigation, drinking-water supply and other uses. Direct discharge of groundwater to Te Waihora/Lake Ellesmere through the lake bed is thought to be minor (White 2009).

1.28 Groundwater is by far the most utilised water resource in the catchment with a total consented groundwater allocation of approximately 487 million cubic metres per year. Consented abstraction exceeds the allocation limits for Rakaia-Selwyn Groundwater Allocation Zone (RSGAZ) and Selwyn-Waimakariri Groundwater Allocation Zone (SWGAZ) set in the NRRP and pLWRP by about 35 percent[3].

1.29 Currently, the average nitrate concentrations in the groundwater monitoring well network in the catchment are just over half of the drinking water standard. Any exceedances of the drinking water standard are generally temporary. Increasing nitrate trends have been detected in about a third of the wells that CRC monitors. E.coli has been detected in approximately 5-15% of the wells.

[3] http://ecan.govt.nz/services/online-services/monitoring/groundwater-allocation/Pages/groundwater-allocation-summary.aspx

Cultural, Social and Economic characteristics

Significance to Ngāi Tahu

1.30 Significant cultural sites in the catchment include: Te Waihora/Lake Ellesmere, Muriwai/Coopers Lagoon, Waikirikiri, the Kaituna River, the Rakaia and Waimakariri braided rivers and their upper catchment wetlands and lakes, and the Rakaia river mouth. More generally, all spring-fed streams, lowland streams and wetlands are of cultural significance, as are areas of mahinga kai and any remaining indigenous biodiversity (Te Whakatau Kaupapa, 1990, O'Connell, 2003). Many of the taonga valued by whanau are dependent on sufficient supplies of high quality water.

Zone Demographics and Communities

1.31 The majority of the Zone is within the Selwyn District, with small parts in Christchurch City. The population of Selwyn District is estimated at 44,200[4]. About 75 percent of the population live in service towns and smaller townships. The Selwyn District is the fastest growing district in New Zealand. Changing land use and the Christchurch Earthquake has resulted in a rapidly growing urban population, more employment opportunities and greater demand for other services such as primary schools, health-care, and community infrastructure has also grown.

1.32 Lincoln and Rolleston are the largest towns both of which are planned to grow significantly over the next 30 years: Rolleston from 7000 to over 14,800 and Lincoln from just over 3000 to 10,100. Other towns such as Darfield, Leeston, and West Melton will continue to grow but to a much lesser extent.

1.33 Nearly 70 percent of the Selwyn District is served by a community water supply, the remainder of the population probably obtain their water from individual takes. Approximately 30 percent of the community water supplies are from shallow wells (well screen 50 metres or less in depth) and are vulnerable to contamination from land uses.

Water Based Recreation

1.34 Fishing, picnicking and swimming are the most popular water-related activities in the catchment. Te Waihora is also used for wind surfing, kayaking, motor boating, water and jet skiing, duck shooting and bird watching. The most popular picnicking and swimming locations are the Selwyn River at Glentunnel Domain, Chamberlains Ford, Coes Ford and Upper Huts.

1.35 The recreational fishery in the lowland streams of the catchment has declined from 12,910 angler days in 1994/95 to 2,880 angler days in 2007/08. One estimate values the current

[4] Statistics NZ (2013) Sub-national Population Estimates: at 30 June 2013 (provisional)

recreational fishery at $0.13 million/yr based on an angler day valuation (travel cost) of $46/day (Harris 2014).

1.36 There is limited information on the value the public places on water quality in the catchment. A small scale study on the lower reaches of the Selwyn River found a strong preference for water clarity, no pollution and safe swimming water. The willingness to pay to improve water quality varied between $70 -$300/household/yr for swimability and $45 to 180/household/yr for clear water (Kerr and Swaffield 2007). In another study, Canterbury residents were willing to pay $20 million/yr to improve water quality at low flows or about $211/household/yr (Tait et al. 2008).

Economic Activity

1.37 The Zone has a significantly higher proportion of GDP devoted to agriculture (at 29 % of GDP 2007), government administration and defence (at 18.4%) than the rest of New Zealand. Other significant sectors are manufacturing (at 8.5 % of GDP), ownership of owner occupied home (at 6.7%) and education (at 6.1%). Sheep and beef farming make up more than half of the agriculture activity, dairy and arable farming is roughly a quarter of the activity while the rest is split between deer farming, nut and tree, flowers and vegetable horticulture.

1.38 Tourism is also important; skiing, white water rafting, tramping, golf and fishing are all flourishing tourist activities. The education and research sectors are significant with Lincoln home to Lincoln University and a number of Crown Research Institutes and other organisations of scientific research most of which are directed to the agricultural sector.

1.39 Irrigated land uses generate approximately 80 percent of the contribution to Gross Domestic Product and other regional economic activity, despite comprising only 50 percent of the total productive area. Dairying occupies 19% of productive land however contributes 40-50 percent of the revenue to the regional economy. Sheep and beef comprise about 30% and arable about 10% of the total contribution. Industrial activity also plays a role in the local economy with factories such as the Fonterra milk processing plant in Darfield.

Commercial Fisheries

1.40 The commercial fishery comprises eels (short and long finned), flounder and yellow eyed mullet. Revenue from commercial fishery (eel and flounder) in Te Waihora/Lake Ellesmere is estimated at $1.5 million/year using current prices for the different species.

2 The Cultural significance of Te Waihora/Lake Ellesmere[5]

2.1 Te Waihora is a tribal taonga of outstanding cultural significance. The lake represents a major mahinga kai and an important source of mana for Ngāi Tahu. The rich mahinga kai resources of the lake brought 67 generations of successive tribal peoples of Waitaha, Ngāti Māmoe and Ngāi Tahu to settle in this place, and remain at the heart of their relationship with the lake today. The significance of the lake in respect of Ngāi Tahu history, mahinga kai and customary fisheries as an outstanding value which warrants protection is confirmed by the National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990, as amended in 2011.

2.2 The first people to arrive in the central Canterbury area were those on the Uruao waka under the captaincy of Rākaihautū. The son of Rākaihautū, Te Rakihouia had been instructed to seek out the rich resources of the coastal area (ki tai) while Rākaihautū traversed the mountain regions identifying the resources of land (ki uta). Te Rakihouia discovered the wetland of Te Waihora that teemed with fish and birds and upon reuniting with his father took him to the lake where Rākaihautū proclaimed Te Waihora as Te Kete Ika a Rākaihautū – The Great Fish Basket of Rākaihautū.

2.3 Some generations later, the Ngāti Māmoe rangatira (chief) Tutekawa built the pā of Waikākahi on the shores of Te Waihora at the eastern end of Kaitōrete Spit, drawn to the area by the knowledge of the quality and abundance of tuna (eel) that could be found in the lake. His son Te Rakitāmau built the pā Hakitai, situated near the traditional opening of Te Waihora to the sea.

2.4 When Ngāi Tahu moved southwards from the Kaikōura coast securing land and resources, the chief Te Ruahikihiki had received reports about the abundance of īnaka, pātiki and tuna in Te Waihora and proclaimed "Ko tāku kāika ko Orariki" (Orariki at Taumutu is my place). Orariki (the place of chiefs) and Te Pā o Te Ikamutu (the village of the backwash of the fish) were built on a narrow section of land between the edge of Te Waihora and the sea where the Hone Wetere Church now stands. These pā together with Te Pā o Moki (the pā of Te Ruahikihiki's son Moki, located at the site of the present day Ngāti Moki marae) were built on strategic and defensible sites that were once surrounded by swampland.

2.5 The ability of Te Waihora/Lake Ellesmere to sustain people as a mahinga kai (gathering place), is upheld in the whakataukī (tribal proverb) from Taumutu:

> *Ko ngā hau ki ētahi wāhi, ko ngā kai ki Orariki*
> *No matter which way the wind blows, you will always eat at the pā of Orariki, Taumutu.*

2.6 Ancestral mahinga kai sites remain on the landscape today: Te Kuaowhiti, Waitātari, Waiwhio, Te Raki and are all important sites along the western lake edge. Waikirikiri, with its many pā tuna (eel weirs) and Ararira are two of the larger freshwater inflows to the lake.

[5] This section has been prepared by David Perenara-O'Connell.

Along the eastern lake edge are Huritini, Taitapu, Ahuriri, Motukarara and Kaituna. Hundreds of umu and mahinga kai sites along Kaitōrete reflect the intensity of resource use associated with Te Waihora. At the Taumutu end of Kaitōrete is Kaikanohi, a fishing camp and settlement that provided a place to reside if the lake was open.

2.7 Wāhi tapu (sacred) sites are also located around the lake, further evidence of the significance of the Te Waihora cultural landscape and the relationship of Ngāi Tahu to the lake. These are the places that hold important ancestral connections to the lake. Of particular note is Te Waiwhakaheketūpapaku – a spring head water burial site in which many significant tūpuna are buried.

2.8 The last 160 years have seen the Te Waihora landscape shift dramatically from a rich mahinga kai resource that sustained whānau, to a severely degraded ecosystem. The loss of authority over, and the degradation of Te Waihora was a key issue for Ngāi Tahu in their claim to the Waitangi Tribunal in 1986: "In its own right, Te Waihora was a major limb of the Nine Tall Trees".

2.9 In 1991, the Waitangi Tribunal determined that despite being one of the tribe's "most highly prized and valuable of all their possessions", Ngāi Tahu where losers in the conflict between two economic systems with different priorities over different resources:

> *"Waihora was part of the area sold under the Kemp Purchase. Despite the importance of the lake to Ngāi Tahu as a food resource, despite the reservation of mahinga kai from the sale, despite acknowledgement from the Māori Land Court in 1868 that the tribe had always regarded this place as a valuable fishery and as the tribe's most highly prized and valuable of all their possessions, despite strong protests by Ngāi Tahu over the years, no reserves of any kind were ever created over the lake to protect its use for Ngāi Tahu.*
>
> *The tribunal, in looking at the evidence, concluded that Ngāi Tahu were the losers in a conflict between two economic systems with different priorities over different resources. On the one hand, Ngāi Tahu relied on their traditional economy and expected that their rights to mahinga kai would be reserved to them. On the other hand, the Crown saw that the Ngāi Tahu economy must not prevent the needs and demands of land settlement. The agricultural and pastoral demands won the conflict. As a result Ngāi Tahu interests in Waihora have been completely disregarded."* [Waitangi Tribunal, 1991. Ngāi Tahu Land Report, Chapter 2, Section 2.12].

2.10 The Tribunal strongly recommended that Te Waihora be returned to Ngāi Tahu, and that this be accompanied by significant and committed Crown action to restore Te Waihora as a tribal food resource.

2.11 The Deed of Settlement and Ngāi Tahu Claims Settlement Act 1998 saw the transfer of fee simple title of the bed of Te Waihora to Te Rūnanga o Ngāi Tahu, and the return of several significant food gathering areas. The Settlement also established a joint management

framework between Ngāi Tahu and the Department of Conservation, resulting in the preparation of the Te Waihora Joint Management Plan - Mahere Tukutahi o Te Waihora 2005, a statutory plan recognised as an Iwi Management Plan for the purposes of the RMA, and a conservation management plan under the Conservation Act 1987.

2.12 Today the restoration and rejuvenation of the mauri and ecosystem health of Te Waihora is a reality. Ngāi Tahu and CRC have implemented a co-governance agreement for the active management of Te Waihora and its catchment. Whakaora Te Waihora is a long-term relationship agreement and shared commitment between the two parties for the ecological and cultural restoration of the lake, bringing together the tikanga responsibilities of Ngāi Tahu and the statutory responsibilities of the regional council. These initiatives recognise the lake as a tribal taonga, and a regional treasure. Some of the current actions occurring in the catchment under Whakaora Te Waihora are described in Section 5 of this Report.

2.13 The National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990 confirms the outstanding value of the lake in respect of Ngāi Tahu history, mahinga kai and customary fisheries, and as habitat for wildlife, indigenous wetland vegetation and fish. The multiple values of the lake reinforce the importance of the lake across the community and the region. While restoring the lake as a tribal food resource is about restoring mana, rangatiratanga and kaitiakitanga, it is also about restoring a place of importance to the community and a wetland of national and international significance. As noted by Tā Tipene O'Regan: "What is good for Te Waihora is good for Ngāi Tahu and what is good for Te Waihora and for Ngāi Tahu is good for New Zealand."

2.14 It will take at least another generation to see meaningful change on the Te Waihora landscape. But Ngāi Tahu, CRC, and our partner organisations, are up for the challenge. Te Waihora will once again nourish and sustain Ngāi Tahu culture and identity, and provide a resource for the wider community to benefit. As eloquently confirmed in 2011 by the late Aunty Maria Johnson in her evidence to the Commissioners hearing the application to amend to the National Water Conservation order for the lake: "It [the lake] is in my blood. I dream of what it could become."

Mā te tāngata e hangaia	Just as it is people that create things
Mā te tāngata e whatia ai	And just as it is people that break these things down
Mā te tāngata anō e tuituia	So it is also people that must repair those things that they have damaged and right those things that they have wronged.

2.15 Further information regarding the Cultural Landscape/Values Management Area is set out in Appendix D.

3 Canterbury Water Management Strategy[6]

History of the Canterbury Water Management Strategy

3.1 The Canterbury Water Management Strategy (CWMS) is the culmination of a process that started in 1999. Initial stages provided an assessment of water availability and water demands for the Canterbury Region and evaluation of potential water storage sites with multi-stakeholder teams.

3.2 In 2008, the Canterbury Mayoral Forum took ownership of the CWMS. The Canterbury Mayoral Forum is constituted by the 10 Mayors in the region, the chair of the Canterbury Regional Council (CRC), and all the Chief Executives.

3.3 The Canterbury Mayoral Forum broadened the scope of the CWMS to include water quality/land-use and biodiversity, and requested an extensive public consultation process. Importantly they established a Steering Group with a broad range of interests represented.

3.4 Following stakeholder meetings on the uses and benefits of water in mid 2008, the Steering Group established a set of issues and opportunities for water in Canterbury and an initial draft of a vision and set of principles. In April 2009, a brochure was sent to all households in Canterbury seeking their views on water management. The document contained the draft vision and principles, and four possible strategic options for advancing water management in Canterbury. It was followed up with 10 public meetings. Over 1100 responses were received, and the CWMS Steering group heard from all submitters who wanted to present in person.

3.5 In August 2009, the CWMS Steering group released a draft Canterbury Water Management Strategy. It contained a further draft of the vision and principles. It introduced the zone committee concept. At the public meetings one of the most common requests was for local involvement in decisions. The zone committee concept is a response to that request. The August draft also introduced the targets.

3.6 The CWMS Steering group sought written submission on its draft and finalised the strategy in November 2009. The only part that was not finalised was the targets. The targets were finalised and a new version of the document was released in July 2010.

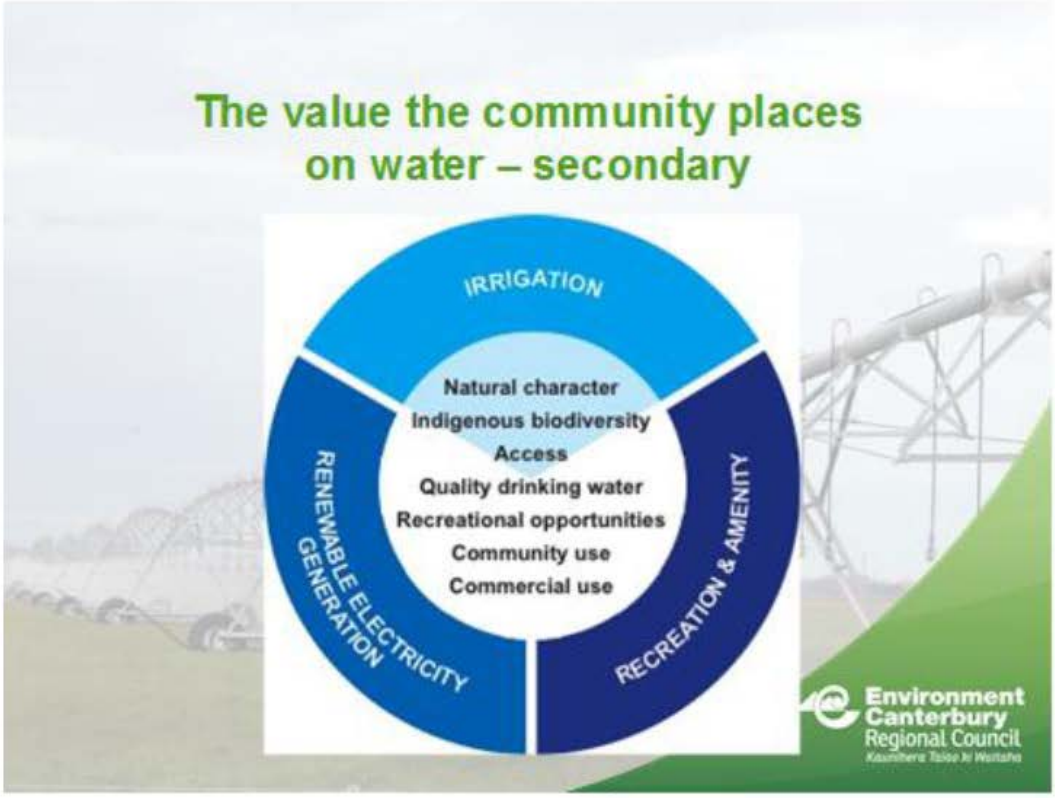
3.7 The Canterbury Water Management Strategy - Framework Document was endorsed by all Councils in Canterbury between November 2009 and February 2010. All endorsements noted in particular the vision of the CWMS –

3.8 To enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from our water resources within an environmentally sustainable framework.

[6] This section has been prepared by Christina Robb.

Elements of the CWMS

3.9 The two diagrams below present the principles of the CWMS graphically. All the values listed are important and all are values that the CWMS seek to protect or provide for. The principles were written through a community process with the priority reflecting a community desire to ensure the second order priorities are not obtained at the cost of the first order priorities.



3.10 As well as the principles, the CWMS framework document describes the concept of parallel development. Parallel development requires action on three fronts:

a. Environmental restoration;

b. More reliable water supply through storage; and

c. Improved land management - nutrient and water efficiency.

3.11 The CWMS framework document contains 10 target areas - ecosystem health/biodiversity, natural character of braided rivers, kaitiakitanga, drinking water, recreational and amenity opportunities, water-use efficiency, irrigated land area, energy security and efficiency, regional and national economies and environmental limits. These targets embody the concept of parallel development with the need to make progress on all targets.

3.12 The zone committees and the regional committee are the key delivery mechanism for the CWMS. The CWMS divides Canterbury into 10 zones each of which has a committee established.

3.13 The Committees are charged with preparing an implementation programme for their zone or region.

Implementation of the CWMS in the Selwyn Te Waihora catchment

3.14 The implementation of the CWMS forms part of the Terms of Reference for the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 (ECan Act). The ECan Act requires that the notice appointing the Commissioners include a terms of reference. The Terms of Reference were gazetted on 29 April 2010 and include the following specific expectation:

Build on the collaborative work of the Canterbury Water Management Strategy including reviewing and addressing matters as necessary for sound policy development and continue the engagement with key stakeholders and the public on improving the management of water in Canterbury.

3.15 Implementation of the CWMS in the Selwyn Te Waihora catchment has occurred through the Selwyn Waihora Zone Committee. Section 4 of this report describes the terms of reference for the Selwyn Waihora Zone Committee (which required it to develop a Zone Implementation Programme) and the process that the Committee went through to reach its recommended 'Zone Committee Solutions Package' which forms the basis for Variation 1

4 Zone Committee Role in Process[7]

Introduction

4.1 This section of the section 42A report has been prepared by the Selwyn Waihora Zone Committee (Zone Committee) established under the Canterbury Water Management Strategy (CWMS).

4.2 The purpose of this section is to outline the process the Selwyn Waihora Zone Committee has been through and how it reached its recommended '*Zone Committee Solutions Package*' for the Selwyn Waihora catchment.

Canterbury Water Management Strategy

4.3 As described in section 3, the CWMS provides a path towards improving the management and use of Canterbury's water resources. The CWMS divides Canterbury into ten zones each of which has a water management committee established.

4.4 The Zone Committee terms of reference[8] are approved by both the regional and the relevant local council(s) when each committee is established. The terms of reference state that the purpose and function of each Committee is to:

> *"Facilitate community engagement in the development and periodic review of a Water Management Implementation Programme that gives effect to the Canterbury Water Management Strategy."*

4.5 The Terms of Reference also set out how members of the community can be appointed to a zone committee. To be eligible for appointment to a zone committee the candidate must either live in or have a significant relationship with the Zone. The "operating philosophy" as set out in the Terms of Reference requires the Committee to seek consensus in decision-making where at all possible.

4.6 Canterbury Regional Council (CRC) and the local authorities receive the Implementation Programmes. CRC then resolves to use the Implementation Programmes as the basis for policy and work programmes.

[7] This section has been prepared by David Painter.

[8] Selwyn Waihora Zone Water Management Committee Terms of Reference: http://ecan.govt.nz/get-involved/canterburywater/committees/selwyn-waihora/Pages/membership.aspx#terms.

Selwyn Waihora Zone Committee

4.7 The Selwyn Waihora Zone Committee (referred to in this report as 'Zone Committee' or 'Committee') is a joint committee of Selwyn District Council ("SDC"), Canterbury Regional Council ("CRC") and Christchurch City Council ("CCC").

4.8 The Zone Committee comprises representatives from each of the councils and the Rūnanga with interests in the Zone, together with five appointed community members. The table below shows the 14 members of the Zone Committee as at July 2013 (when the ZIP Addendum was finalised by the Committee).

Member	Community	Interest
Pat McEvedy (Chair)	Southbridge	SDC Councillor
Terrianna Smith (Deputy Chair)	Southbridge	Te Taumutu Rūnanga
John Sunckell	Brookside	Dairy farming
David Painter	Greenpark	Water resource management
Doug Catherwood	Darfield	Farming, Central Plains Water
Sue Cumberworth	Tai Tapu	Agri-business
Maree Goldring	Castle Hill Village	Biodiversity/alpine areas
Clare Williams		Te Rūnanga o Ngāi Tuahuriri
Te Whe Phillips		Te Hapu o Ngati Wheke
Charles Crofts		Te Rūnanga o Koukourarata
Robin Wybrow		Te Rūnanga o Wairewa
George Tikao		Te Rūnanga o Onuku
Donald Couch		CRC Commissioner
Stewart Miller		CCC Community Board

4.9 Previously the community members included Peter Jackson and Eugenie Sage with interests in fishing/recreation and biodiversity/environment respectively. They were involved in the development of the ZIP.

4.10 Since July 2013 there have been changes to the Committee. Riki Nicholas replaced Robin Wybrow as the representative for Te Runanga o Wairewa in October 2013; Doug Catherwood resigned in August 2013; Sue Cumberworth retired in December 2013; and as part of the Committee refreshment process Ron Pellow, Allen Lim, Bill Lambie and Stewart Miller joined the committee in February 2014 as community members; Councillor Tim Scandrett replaced Stewart Miller as the CCC representative in February 2014.

Collaborative, consensus and informed approach

4.11 The Committee operates in a collaborative manner and has adopted a consensus approach to decision making.

4.12 From its beginning, and continuing, the Committee has been provided with a very large volume of data and information: cultural, social, economic, environmental, scientific and statutory as well as from local knowledge and experience. The scientific and technical information was a particular challenge, due to the varied backgrounds of Committee members, the volume of information to be understood and, sometimes, apparently incomplete or contradictory information.

4.13 An 'Expert Workshop' arranged by the Committee which took place on 30 September 2011 was particularly helpful for Committee members to understand the strengths and limitations of the science advice available to us. More than a dozen invited science experts joined Committee members in a very open discussion of the state of knowledge relevant to Committee context and concerns. It included robust exchanges between experts with differing views on some key questions – the effects of aquifer inter-connection on groundwater flows and availability, for example. This Workshop provided an excellent background for the later provision of technical information in the Zone Committee process described in Section 6 of this report.

4.14 The Committee has engaged, and continues to engage with, a wide range of organisations and communities and has developed recommendations in collaboration with a wide range of people with interests in water. It has, however, been challenging and not always possible to satisfy the wide range of interests in the Selwyn Waihora catchment (and which as a consequence may not meet all of the wishes of individual parties).

Development of the Zone Implementation Programme (ZIP)

4.15 The ZIP was agreed to at the Zone Committee's meeting on 6 December 2011, fourteen months after the Zone Committee's first meeting. A copy of the ZIP is attached as Appendix E.

4.16 The ZIP is a non-statutory document that contains a collection of integrated actions and proposals to give effect to the vision and principles of the CWMS for the Selwyn Waihora Zone. The Zone Committee worked in a collaborative manner with extensive community engagement to develop the ZIP recommendations. A draft ZIP was released in October 2011 and was available online, at public meetings and at Council offices. Three public meetings were held at Darfield, Leeston and Lincoln to discuss the draft ZIP. Twenty nine people or organisations provided written submissions on the draft ZIP. The Committee did not hear all submissions. At its November 2011 meeting it heard responses to the draft ZIP from the following who had requested to talk with the committee: Waihora Ellesmere Trust,

Foundation for Arable Research, DairyNZ, Fonterra, North Canterbury Fish and Game Council, Central Plains Water, Irrigation NZ and TrustPower.

4.17 The ZIP was received by CRC at its Council meeting in December 2011 and by SDC and CCC at their council meetings in February 2012. The resolution by CRC was as follows:

That the CRC:

i. Receives the Selwyn Waihora Zone Implementation Programme;

ii. Notes the content and that this is the fourth of eleven implementation programmes and is a substantial contribution to implementing the Canterbury Water Management Strategy;

iii. Endorses the Selwyn Waihora Zone Implementation programme as the basis for the design and realignment of work programmes, for the drafting of regional plan provisions and for the preparation of a draft Long Term Plan;

iv. Notes that:

i. Many of the recommendations in the Zone Implementation Programme are being addressed through existing Environment Canterbury work programmes;

ii. Increased resourcing in the land use and water quality programme and the freshwater biodiversity programme will enable Environment Canterbury to better respond to recommendations relating to biodiversity and community initiatives;

iii. The implementation of Whakaora Te Waihora will be complementary to the implementation of the ZIP recommendations for Te Waihora/Lake Ellesmere catchment; and

iv. Where existing resources cannot address all recommendations in the Zone Implementation Programme, staff will work with the zone committee to prioritise action and further develop and cost some actions.

Zone Implementation Programme (ZIP) outcomes

4.18 The ZIP contained the Zone Committee's agreed nine priority outcomes for action that are specific to the Selwyn Waihora Zone. The priority outcomes are:

- thriving communities and sustainable economies;
- high quality and secure supplies of drinking water;
- best practice management of nutrients and water;
- the integration of kaitiakitanga into water management;
- healthy lowland waterways;
- Te Waihora is a healthy ecosystem;
- hill-fed waterways that support aquatic life and recreation;
- the protection of alpine rivers and high country values; and
- enhanced indigenous biodiversity across the Zone.

4.19 The Zone Committee considers all of the ZIP priority outcomes are equally important and the outcomes set out in the ZIP are not in any priority order. Under the nine priority outcomes are more defined specific outcomes from which progress can be measured.

4.20 The ZIP contained actions, tactics or strategies to address the CWMS targets. The ZIP did not contain any specific recommendations in terms of changes to the planning framework although under the topic of nutrient management the Committee recommended that from 2012 CRC should:

> *"Work through the Zone Committee under the CWMS to set water quality limits in accordance with the National Policy Statement for Freshwater Management."*

ZIP Addendum

4.21 CRC Commissioners tasked the Zone Committee with preparation of a ZIP Addendum by December 2012 that recommended a water management solutions package.

4.22 The solutions package was to deliver on the CWMS target of setting environmental flows for surface streams, rivers and groundwater and catchment load limits for nutrients consistent with the fundamental principles of the Strategy.

4.23 The Zone Committee understood that the *'Zone Committee Solutions Package'* would be reflected in a sub-regional chapter of the pLWRP and needed to be tested against the Resource Management Act plan development framework and in particular the objectives in the pLWRP, the Regional Policy Statement and the National Policy Statement for Freshwater Management. Under this framework the Committee was particularly aware of the need to set limits and ensure the limits, alongside other methods, achieved the catchment specific outcomes sought.

4.24 Developing a solutions package that reflected the wide range of interests in water in the zone, RMA requirements, and delivered the CWMS targets was a challenge. The Zone Committee was granted two extensions and finally completed the ZIP Addendum in July 2013.

4.25 The overall goal of the '*Zone Committee Solutions Package'* as recommended in the ZIP Addendum is to improve cultural and environmental outcomes in the Selwyn Waihora catchment while maintaining farm viability and economic growth.

4.26 The key values are:

- The lake – Te Waihora – and its margins are a taonga for Ngāi Tahu; and
- Agriculture, underpinned by reliable water supply, is a significant contributor to the economy.

4.27 The Zone Committee is clear that an *integrated water management solution* is required for the Selwyn Waihora catchment that includes both regulatory and non-regulatory actions. If

all actions do not occur then the outcomes sought for the catchment will not be achieved. The timeframe for the recommendations in the ZIP Addendum is about 30 years, reflecting:

a) the likely 10 – 20 year-long lag between agricultural nitrogen losses from the land and load to the lake, and

b) the time required to implement lake and catchment interventions and to change land management.

4.28 The ZIP Addendum is agreed by the Zone Committee members to be a significant first step towards achieving agreed goals and delivering on the CWMS targets in the Selwyn Waihora catchment. The package contained is informed by both best available science and a large amount of community input. The collaborative approach, and the equal regard to all CWMS targets, means that solutions are unlikely to completely satisfy every interested party or individual. On most occasions agreement could be reached based on the available information and the wide range of knowledge and experience of committee members. In order to reach an integrated solution it was necessary for some 'gifting and gaining' on occasion.

4.29 The following describes how the Zone Committee reached the recommendations in its *'Zone Committee Water Management Solutions Package'*. This should be read alongside section 6 of this report that describes the technical input into the Zone Committee process.

Zone Committee and the Focus Group process to explore scenarios and Solutions Package 1

4.30 The process for determining the *'Zone Committee Solutions Package'* commenced with a process that was based on the CRC's "Preferred Approach for managing the cumulative effects of land use and water quality in Canterbury" that was piloted in the Hurunui River catchment in 2009.

4.31 The approach is a collaborative, science-informed and community-led process where landowners, and other parties with a particular interest in water issues, work together within an agreed framework to explore different land use futures (scenarios). The scenarios start with the current state and cover a range of options from strongly development- to strongly environment- focused. The process explores what the resulting limits and methods (regulatory and or non-regulatory) would need to be and the social, cultural, economic and environmental consequences.

4.32 The approach undertaken in Selwyn Waihora utilised the input of a wide range of community members working together in focus groups to evaluate scenarios and assist with developing the initial water management solution package. The Resource Management Act plan development framework was outlined to the Focus Groups, including the development or revision to water quality and quantity limits.

4.33 The focus groups for the Selwyn Waihora process comprised Rūnanga, Irrigation, Dairy, Arable/Horticulture/Viticulture, Sheep/Beef/Pork, Rural Professionals, Rural Women, Environment, Recreation, Commercial/Tourism/Energy, Education, Health/Local Authorities

and Community Boards/Committees, with each group made up of between 4 and 10 participants. Zone Committee members circulated amongst the focus groups, listening to views and answering questions.

4.34 Fourteen Community Focus Group workshops were held between December 2011 and October 2013. The workshops were reasonably consistently attended by 60 to 80 Focus Group members.

4.35 Each Focus Group evaluated the scenarios presented to them by the CRC technical team at workshops. The groups were presented with the modelled consequences of each scenario using a set of social, cultural, environmental and economic indicators. The modelling and technical assessment of the scenarios is described in section 6 of this s42A Report. Each Focus Group provided feedback on the acceptability of the consequences of the scenarios for their Focus Group. During the evaluation, ideas were also gathered on actions that could be incorporated into a solution package to assist with achieving, or better achieving, outcomes sought.

4.36 As part of the process the Zone Committee assisted CRC staff to set the scenarios to be evaluated and the social, cultural, economic and environmental indicators to be used to assess the scenarios. The indicators were selected so that evaluation could be made against the Zone Committee's priority outcomes. The Focus Groups' evaluation of the current state and the scenarios is described in the Selwyn Waihora Limit Setting Process series of reports.

4.37 The evaluation and consideration of the scenarios by the Focus Groups and Zone Committee formed the basis for the Committee developing, with input from the CRC technical and planning team and Focus Group co-ordinators, the content of the initial solutions package ("Solutions Package 1") that was modelled.

4.38 Solution Package 1 was evaluated by the Focus Groups in September 2012 and discussed by the Zone Committee in October 2012.

Development of Zone Committee Solutions Package and ZIP Addendum

4.39 Following the focus group evaluation of Solutions Package 1, the Zone Committee continued its workshops and meeting process to improve and refine the Solutions Package for the catchment. In particular, the Committee sought ways to enable some outcomes to be achieved sooner or more fully, as well as fleshing out details that had not been included in Solutions Package 1.

4.40 In developing the Solutions Package for the catchment the Zone Committee was informed, though not led, by the very large body of technical information[9] created through the

[9] Refer to section 6 of this Section 42A Report

modelling and evaluation of the scenarios and Solutions Package 1 as well as additional material such as the COMAR report[10] and economic analyses[11] of on-farm impacts.

4.41 Relevant technical and planning expertise was available to the Zone Committee for all discussions that contributed to the Committee's consensus on a water management solution for the catchment.

4.42 At every meeting and workshop the relevant technical expert was able to answer Committee members' questions on technical matters and, when required, outline the scientific uncertainties and provide expert opinion on the risks associated with possible approaches to address specific aspects such as rehabilitating lake health.

4.43 Similarly planning staff were involved during all meetings and workshops to provide advice and identify whether actions could be effectively or efficiently addressed through rules or limits in a plan. Planning staff provided advice on planning risks as they arose and reinforced the need for the actions (regulatory and non-regulatory methods) being explored to achieve the limits and the freshwater outcomes sought over time in accordance with the National Policy Statement for Freshwater Management or, alternatively, the need to revise the freshwater outcomes to reflect the actions proposed.

4.44 Ngāi Tahu staff were also present during these meetings and assisted Rūnanga representatives on the Zone Committee to understand the risks in achieving iwi management plan objectives. Ngāi Tahu staff had additional workshops with Rūnanga representatives to clarify and discuss aspects of the proposed Solutions Package.

4.45 The Zone Committee found the task of developing a water management solution, which would deliver on all CWMS targets, meet RMA requirements and satisfy the wide range of interests in water in the catchment, a challenge. At times Zone Committee members felt they were "between a rock and a hard place" as they discussed the anticipated decline in water quality from current and historical land use that was yet to be seen in the lowland streams and lake and the impact or extent of interventions that would be required to reverse the decline and the flow-on social, economic and cultural implications for the catchment.

4.46 In March 2013 the Zone Committee was granted an extension to when it had to make its recommendations to CRC. The extension was granted so the Committee could continue to address the challenges around the following:

1. Whether and how improvements in ecological flows in the lowland streams and the Selwyn River could be delivered more quickly;

[10] Cultural Values, Flow &Water Management Issues for the Waikirikiri/Selwyn - Te Waihora Catchments. Report No R13/116 (Tipa & Associates 2014).

[11] See Appendix 4 and 8 in Report No R14/15. Technical report to support water quality and quantity limit setting in Selwyn Waihora catchment. Predicting consequences of future scenarios: Overview Report (Robson 2014).

2. Agreement on the water quality outcomes to be provided by the solution package, and the role of the solutions package in making progress towards the Committee's long-term vision;
3. Agreement on the proposed catchment nitrogen load limit/target (and timing) that is to be met by farming activities in conjunction with catchment and lake mitigation measures;
4. Identifying preferred areas for major water storage;
5. Agreement on the controls/mechanisms to be applied to farming activities at a property level to achieve the Committee's nutrient load limit/target; and
6. Engagement with consent holders to discuss the implications of recommended ecological and cultural minimum flows.

4.47 Each of these issues was resolved so that the Zone Committee was able to reach a consensus through a combination of evaluation of the various options, technical input (which is described more fully in section 6 of this report), planning input and consultation with affected stakeholders and the community.

4.48 The following paragraphs provide some examples of how the committee worked on the above issues. They are examples only and should not be taken out of context as the *'Zone Committee Solutions Package'* requires an integrated approach including both regulatory and non-regulatory methods.

Use of technical information: proposed catchment agricultural nitrogen load limit/target

4.49 The Zone Committee process combined factual information ('what is') with values information ('what should be') to arrive at recommendations for implementation ('how to get there'). This was particularly complex for recommending a catchment agricultural nitrogen load limit.

4.50 It was clear from best available science and modelling provided to the Zone Committee that there was nitrogen 'in the post' from decades of prior land use on the plains which had caused, and would continue to cause, nitrate-nitrogen levels in shallow wells that would exceed half the MAV (Maximum Allowable Value) national drinking water standard and would adversely impact on ecosystem health, especially in Te Waihora with its plentiful supply of legacy phosphorus in the lake-bed sediments.

4.51 Through the development and evaluation of the water management options (scenarios) and Solutions Package 1, the Zone Committee was clear in its view that the agricultural nitrogen load limit should contribute, with other measures:

- to reduced nitrate-nitrogen levels in groundwater for human consumption and reduced inflows of nitrogen to the lowland streams and the lake;
- an acceptable likelihood of achieving environmental and cultural outcomes for the lake;

and would need to:

- achieve an appropriate reduction in nitrate leaching from agricultural land use, in combination with reductions in the loads from point sources;
- be achievable: technically, economically, culturally and socially, in a reasonable time frame.

4.52 It was also clear to the Zone Committee that it was dealing with a 'wicked problem':

- Incomplete knowledge and understanding
- Many people and opinions involved
- Significant impacts of solutions
- High degree of inter-connection with related problems.

4.53 At its May 2013 meeting, the Zone Committee reviewed, with the help of technical experts, its understanding of many facets of the problem, including: nitrogen effects on lake algal blooms and mahinga kai; other cultural aspects of lowland stream and lake water quality; trends in potable groundwater nitrate levels; lag times between land use change and nitrogen inflows to the lake; current understanding of on-farm good management practices; land use intensification, especially by irrigation and dairy conversion; economic and farm viability effects of better (nitrogen leaching reducing) farm management practices being required; and the likelihood of successful lake interventions to address legacy phosphorus and restore beneficial macrophyte beds.

4.54 Also at the May 2013 meeting, the Zone Committee heard from Ron Pellow, Executive Director, South Island Dairy Development Centre, on the financial and environmental performance of the Lincoln University dairy farm (LUDF). The Committee's understanding of the estimated nitrate losses from LUDF and the management practices they use, was that this farm was operating at better than current good management practice and had nitrogen losses at about the mid-way point between good management practice and maximum feasible mitigation[12] for dairying.

4.55 The Zone Committee was aware that a catchment agricultural nitrogen load limit would not, by itself, provide adequate change to achieve the desired outcomes for groundwater and surface water quality, especially surface water quality in the lowland streams and Te Waihora, in a desirable time frame. Other changes and interventions included in the '*Zone Committee Solutions Package*' would be crucial in achieving the outcomes sought for Te Waihora and the streams.

4.56 The Zone Committee decided at its May 2013 meeting to recommend setting a catchment agricultural nitrogen load limit based on nitrogen leaching losses that would require all farming activities to perform at the mid-way point between losses under good management practice and those under maximum feasible mitigation. This was understood to mean that, if applied equally to all farming activities in the catchment, everyone would need to make a further 12.5% reduction in their nitrogen losses beyond good management practice loss rates.

[12] See pages 13-14 of the Technical Overview Report for an outline of maximum feasible mitigation

Engagement with sector groups to establish how farming activities would be managed to meet the Agricultural N load

4.57 The Zone Committee heard from primary sector representatives in October 2012 and January 2013. This included presentations from Dairy NZ, Pork NZ, Sheep and Beef, Foundation for Arable Research (FAR), Irrigation NZ and Horticulture NZ.

4.58 The Committee was concerned about the wide divergence between different primary sectors on how to manage to a nitrogen load target at the property level. The committee asked the primary sector groups to work together to develop a consensus approach[13].

4.59 A policy working group comprising a primary sector representative, a staff member from Te Rūnanga o Ngāi Tahu and a CRC planner worked on this task from February through July 2013. The primary sector representative, Andrew Curtis, Irrigation NZ, facilitated discussion and input from representatives from a wide range of primary sector organisations, including DairyNZ, Federated Farmers, FAR, Beef and Lamb and Horticulture NZ.

4.60 The working group's recommendations (which form the basis for the farming activity land use rules in Variation 1) were agreed by the Zone Committee at its July 2013 meeting after confirmation that the recommendations met expectations of providing flexibility for low nitrogen leaching land uses, that trading would not be necessary for the regime to operate and that the recommendations met the terms of reference for the working group. The recommendations are included in the ZIP Addendum as Appendix F. The Committee was told that the recommendations had the support of the primary sector representatives who had been involved in the discussions that led to the working group's recommendations.

Engagement with consent holders on recommended minimum flows

4.61 The Committee had received ecological and cultural minimum flow recommendations. This included the COMAR report recommending cultural flow preferences for many of the waterways in the catchment. An economic assessment of the impact of these on reliability of supply had also been undertaken and discussed with the Committee. Minimum flows in the catchment to date had been set through the consent process. Minimum flows on the Selwyn/Rakaia side of the Zone had been examined extensively during the consent review process in 2005 to 2006.

4.62 Community meetings were held in Darfield, Lincoln and Southbridge in early June 2013 to present minimum flow recommendations to potentially affected consent holders and seek their feedback.

[13] See "Zone Committee expectations for work by Primary Sector organisations and others on a recommended approach to managing to water quality limits in Selwyn Waihora catchment" (as agreed at 9 April, 2013) appended to this section

4.63 CRC staff presented the final recommended minimum flows and recommendations on timing and implementation to the Zone Committee in late June and early July 2013. Some Committee members were concerned that the recommended minimum flows would not have effect until after 2025 and therefore streams would not have protection until then. It was, however, accepted that there were existing minimum flows in place and the lowland streams would not receive the benefits of increased flow until alpine water was brought into the catchment. The Committee recognised that this would occur as part of the proposed irrigation scheme in the central plains area, but in stages, with the effects from the final stages occurring as late as 2025. The recommendations were adopted by the Committee, with some modifications that took into account the specific values of particular water bodies and/or reflected some middle ground between the cultural and ecological recommendations and economic considerations.

ZIP Addendum sign off and endorsement

4.64 The recommendations in the ZIP Addendum were agreed on 2 July 2013 at the Zone Committee meeting. This agreement was by consensus. The text of the ZIP Addendum was agreed on 9 July 2013 by a working group of the Committee. A copy of the ZIP Addendum is included as Appendix F.

4.65 The ZIP Addendum was received and endorsed by CRC on 5 September 2013. As recorded in the minutes of this meeting:

> *Resolved*
> *That the Council*
> *a) Receives the Selwyn-Waihora Zone Implementation Programme Addendum*
> *b) Notes the content and that this is a substantial contribution to implementing the Canterbury Water Management Strategy*
> *c) Endorses the Selwyn-Waihora Implementation Programme Addendum as the basis for the Selwyn Waihora Sub-regional section of the Land and Water Regional Plan and for design and realignment of work programmes*
> *d) Notes that*
> *i. Some of the recommendations in the ZIP Addendum are being addressed through existing Environment Canterbury work programmes;*
> *ii. Existing resources will enable Environment Canterbury to meet planning and infrastructure-related recommendations, but increasing resourcing will be required to respond to recommendations relating to land use, water quality, biodiversity and monitoring;*
> *iii. Environment Canterbury will work with the Te Waihora Joint Management Board, Te Runanga o Ngāi Tahu, Selwyn District Council, Christchurch City Council and the Zone Committee to further*

cost actions, identify funding sources, and develop work programmes.

4.66 The ZIP Addendum was endorsed by SDC on 25 September 2013 and CCC (through its Planning Committee to the full Council) on 3 October 2013.

Post ZIP Addendum

4.67 The Committee's discussion, engagement and development of the recommended solutions package for the catchment did not stop in July with the completion of the ZIP Addendum. As the ZIP Addendum was being translated into a proposed variation to the pLWRP, further Committee deliberation led to changes to the *'Zone Committee Solutions Package*'. The key developments and Zone Committee activities between July 2013 and when Variation 1 was notified (February 2014) related to the following:

- Managing water storage in some catchments;
- Ngāi Tahu cultural landscape/values area; and
- The use of the Look-up Table (LUT).

Water storage

4.68 The Malvern Hills Protection Society (MHPS) wrote to the Zone Committee in late July 2013 concerned about the "red-flag" approach taken in the ZIP Addendum to the location of major water storage in the catchment. In particular, MHPS was concerned about any construction of a dam in the Waiāniwaniwa valley.

4.69 Five members of the MHPS, supported by about 20 others, spoke at the August 2013 meeting of the Zone Committee raising concerns about potential water storage.

4.70 The Committee told MHPS that there was no intention to encourage storage in Waiāniwaniwa valley. The Committee chair noted that while water storage was necessary to achieve the goals set by the Zone Committee there were a considerable number of "red flag" issues identified in the Waiāniwaniwa valley that would be a major challenge for water storage there. He said the Committee had recommended that these issues be taken into account in the development of Variation 1.

4.71 In September-October 2013 CRC undertook First Schedule consultation on the draft proposed Variation 1. This draft included two policies on water storage that further clarified that, in reflecting the "red flags", in-stream damming of the full flow on the Selwyn River and the Waiāniwaniwa River above the confluence with the Selwyn River was proposed to be prohibited. The Committee agreed however that there was no intent to totally prohibit storage in the foothills of the catchment.

Ngāi Tahu landscape/values management area

4.72 In the development of the ZIP Addendum the Committee discussed how to give effect to kaitiakitanga in the catchment, protect mahinga kai and wāhi tapu and wāhi taonga values. The Committee encouraged Rūnanga representatives and Te Rūnanga o Ngāi Tahu (TRoNT) staff to identify specific actions that could be included in the ZIP Addendum and given effect to in policies and rules in Variation 1.

4.73 These actions were not identified prior to finalising the ZIP Addendum in July 2013. However, discussions continued between Rūnanga representatives and staff of TRoNT, and CRC planning staff on what needed to be included in Variation 1. The discussions resulted in a recommendation to include a cultural landscape/values management area with corresponding rules to protect Ngai Tahu values. This approach was included in the First Schedule version of Variation 1, and then revised after First Schedule feedback in the notified Variation 1.

4.74 The Zone Committee was briefed on the Ngāi Tahu landscape/values area approach at its October 2013 meeting. The Committee agreed this approach recognised the importance of the lake and its catchment to Ngāi Tahu.

The use of the Look-up Table (LUT)

4.75 In order to establish catchment-wide nitrogen loads for the scenarios and solutions packages explored through the Zone Committee process, a revised Look-up Table (LUT) of Lilburne et al 2013 was used. The LUT provides estimates of nitrogen loss rates (assuming good management practice[14]) for different land uses on different soils across the different rainfall areas in the catchment and the Zone Committee understood that was a robust method to estimate catchment wide loads.

4.76 During the development of the Zone Committee Solutions Package, it was originally hoped that the LUT could be used to provide a table of better-than-good management practice loss rates required for different land uses at a property level that could be used in the regulatory package. This would mean that individual property owners would be able to work out from the LUT a nitrogen loss rate number for their property. The First-Schedule draft of Variation 1 included the LUT and a table of the better-than-good management practice loss rates required for different land uses to achieve the nitrogen catchment agricultural load limit.

4.77 At its October 2013 meeting the Committee was told by representatives of the primary sector that they considered the LUT was developed for modelling catchment-scale nitrate losses, not for property-scale nitrogen allocation and that if the LUT values were included in Variation 1 there would not be buy-in from the primary sector to ensure the nutrient management approach in Selwyn Waihora was successful.

[14] See section 6 in the Technical Overview Report for an outline of assumed good management practices

4.78 Furthermore, the Zone Committee was told by the technical lead of the CRC limit-setting team that it would be difficult to defend the application of the LUT at a property level, but the numbers were still appropriate for catchment modelling and to set the catchment load limit.

4.79 The Zone Committee reluctantly accepted the reality that the LUT and the table of loss rates to achieve the catchment load limit would not be included in Variation 1. The Committee supported development of policies and/or rules in Variation 1 to ensure the better-than-good management loss rates required to meet the catchment load limit would be achieved. The Committee however signalled its desire at the October 2013 meeting, that in the future, once the Matrix of Good Management Practice had been completed, that a table of good management practice loss rates and improved good management practice loss rates should then be introduced into the Plan.

Summary of Zone Committee Solutions Package

4.80 The key pathways to achieve the *'Zone Committee Solutions Package'* are:

A. Lake rehabilitation:
Key to this is addressing the legacy phosphorus in the lake-bed sediments and improved lake-level management. The latter is a pre-requisite for maximising the likely success of other mitigation options, including phytoplankton reduction (i.e. managing legacy phosphorus), macrophyte restoration and marginal wetland enhancement.

B. Farming at significantly better than Good Management Practice (GMP):
This includes setting agricultural nitrogen limits that require better than GMP losses and reducing catchment P load by 50%. Key implementation actions are property-scale nitrogen discharge allowances, mandatory farm environment plans, stock exclusion from waterways (including drains), protection of springhead wetlands, improved drain management, sediment removal from some lowland waterways, enhancement and protection of wetlands, and effective riparian margins on at least 850 km of streams and 1000 km of drains.

C. Water allocation to deliver ecological and cultural flows:
The Committee recognises that there is a strong connection between groundwater and surface water in the catchment with the current amount of groundwater taken adversely impacting lowland stream flows. To help reverse this reduction and to avoid further reduction in lowland flows new water takes should be prohibited, allocated volumes reduced and water transfers restricted.

D. The use of alpine water:
The Central Plains Water (CPW) irrigation development will use "alpine" water from Rakaia and Waimakariri Rivers to irrigate 30,000 ha of dryland (new irrigation) and replace groundwater takes on 30,000 ha of currently irrigated land in the command

area. This will increase the amount of water in the groundwater system, significantly improving flows in lowland streams and the lower reaches of hill-fed rivers.

The alpine water also provides opportunity for managed aquifer recharge, in particular the use of targeted stream augmentation to improve lowland stream flows.

E. Manage catchment to recognise its cultural importance to Ngāi Tahu:
Te Waihora and its margins and associated wetlands are recognised by Ngāi Tahu as a cultural landscape of particular importance reflecting the importance of the lake to Ngāi Tahu culture, history and identity, the concentration of mahinga kai, wāhi tapu and wāhi taonga values, and the need to manage the lake environment in an holistic manner. Te Kete Ika a Rākaihautū – the fish basket of Rākaihautū – is the original name for Te Waihora and exemplifies the once rich and bountiful resources of the lake.

Recognising Te Waihora as a Ngāi Tahu cultural landscape means that activities that may affect the lake and the relationship of Ngāi Tahu to it are managed in a way that reflects the sensitivity of the lake to those activities and the degree of risk to particular values. It also means that land use activities can be assessed for consistency with Ngāi Tahu objectives to restore the mauri and mahinga kai value of the lake.

Waikekewai and Taumutu Creek are of high cultural significance to Te Taumutu Rūnanga. The waterways are recognised as wāhi tapu (sacred places). Abstracting water for irrigation from the catchment needs to respect this.

4.81 The Zone Committee is clear that Variation 1 by itself will not deliver the outcomes sought by the Committee nor the freshwater outcomes recorded in Tables 11(a) and (b) in Variation 1. In particular, the Committee's solutions package includes the following non-regulatory interventions that are particularly important in achieving the outcomes sought:

A. Lake rehabilitation interventions (including managing legacy phosphorus, improved lake-control management, floating wetlands, macrophyte restoration and lake-margin wetlands);
B. Waterway interventions (including effective riparian margins on streams and drains; sediment removal; improved drain management);
C. Catchment interventions (including wetland protection and enhancement; targeted stream augmentation; broader-scale managed aquifer recharge (MAR) in upper/mid plains; sediment retention dams);
D. Central Plains Irrigation development (providing new irrigation, allowing replacement of current groundwater takes on 30,000ha; providing alpine water for targeted stream augmentation and MAR).

4.82 The Zone Committee understands that the regulatory recommendations (now reflected in Variation 1) are now subject to a Resource Management Act hearing process. In the meantime the Zone Committee continues to work on the implementation of the non-regulatory recommendations and continues to communicate the importance of making the

steps recommended in their *'Zone Committee Solutions Package'* to address water quality and quantity issues in the catchment. Section 4 provides information on current and proposed non-regulatory interventions.

5 Non-Regulatory Interventions - Zone Implementation Programme Addendum outcomes[15]

5.1 The Selwyn-Waihora Zone Committee has set out in the Selwyn-Waihora Zone Implementation Programme (ZIP) and ZIP Addendum a suite of recommendations that in combination will achieve the priority outcomes for the catchment and the lake. The water quality and quantity limits proposed in Variation 1 form part of the recommendations, but the limits on their own cannot achieve the priority outcomes and a suite of complementary non-regulatory actions is also needed. Broadly, these can be described as catchment interventions, lake interventions, monitoring and infrastructure development. While many of these actions can be supported or enabled in the pLWRP or the provisions of Variation 1 – for example through the stock exclusion rules and the requirements for farm environment plans – the ability to meet the outcomes will depend on substantial public and private investment. This part of the section 42A Report describes existing and proposed non-regulatory work programmes by both CRC and many other parties.

Formal Council commitments to an ongoing programme of work

5.2 When the CRC received the Selwyn Waihora ZIP Addendum on 5 September 2013, the Council noted in its resolution:

(i) Some of the recommendations in the ZIP Addendum are being addressed through existing CRC work programmes;

(ii) Existing resources will enable CRC to meet planning and infrastructure-related recommendations, but increased resourcing will be required to respond to recommendations relating to land use water quality, biodiversity and monitoring;

(iii) CRC will work with Te Waihora Board, Te Rūnanga o Ngāi Tahu, Selwyn District Council, Christchurch City Council and the Zone Committee to further cost actions, identify funding sources, and develop work programmes.

5.3 Similarly, when Selwyn District Council received the ZIP addendum on 25 September 2013 the Council noted that:

(i) Some of the recommendations in the ZIP Addendum are being addressed through existing work programmes;

(ii) CRC will work with Te Rūnanga o Ngāi Tahu, Selwyn District Council, Christchurch City Council, Government, industry and other parties to identify and progress work funding for the work programme to implement the ZIP addendum.

5.4 Achieving the Zone Committee recommendations and outcomes for the catchment and lake is an ongoing priority for CRC. CRC Commissioners have revised and renewed their work programme with the Minister of Local Government and the Minister for the Environment to reflect this priority. In a letter received on 29 October 2013, a set of region-wide outcomes

[15] This section has been prepared by Christina Robb.

for the Commissioners are set out by the Minister for the Environment and the Minister of Local Government. The agreed outcomes include:

- Canterbury Water Management Strategy (CWMS) Zone Committees are well-established as the community-based cornerstone of the land and water management approach in Canterbury.
- An active nutrient management programme is established in partnership with primary sectors and Ministry of Primary Industries (MPI) aimed at land use and water quality that complements the work of the CWMS Zone Committees
- Territorial authorities and key stakeholders are actively engaged in the region's freshwater management
- Have completed the present agreed and negotiated the programmes that will follow for the restoration of the Wainono Lagoon and Te Waihora.

Existing work programmes – Whakaora Te Waihora

5.5 The most substantial existing work programme is the first phase of Whakaora Te Waihora – A Joint Cultural and Ecological Restoration Plan. Whakaora Te Waihora is a joint programme between Ngāi Tahu and CRC with a shared commitment to the restoration and rejuvenation of the mauri and ecosystem health of Te Waihora (Lake Ellesmere) so that it continues to provide current and future generations with the sustenance, identity and enjoyment that it has in the past.

5.6 The joint restoration plan has the following aims:

- Accelerate the restoration of ecosystem health of an internationally significant wetland, notable for its outstanding wildlife and native vegetation values.
- Begin the process of restoring and enhancing specific cultural sites and mahinga kai.
- Protection and restoration of lake margin wetland habitats, existing indigenous vegetation and wildlife and restoration of specific lowland tributary streams and riparian habitats.
- Improved lake and catchment management practices by focusing on sustainable land use and drainage practices within the catchment.
- Establish a robust monitoring and investigations programme that ensures the lake response to management is understood and management activities are adapted accordingly.

5.7 The vision and targets of Whakaora Te Waihora support and align with the outcomes established by the Selwyn Waihora Zone Committee.

5.8 The first phase of Whakaora Te Waihora is a three year, $11.2 million work programme (2012-2016) jointly funded by central Government, CRC, Te Rūnanga o Ngāi Tahu and Fonterra. Actions are focussed on achieving both visible and meaningful improvement in ecosystem health in the funding time frame; while also providing a strong basis for understanding and implementing future management actions which will achieve the

outcomes of Whakaora Te Waihora (and by implication the Zone Committee's recommendations where they overlap with the Whakaora Te Waihora outcomes) over the next two generations.

5.9 On 25 August 2011, a Memorandum of Understanding was signed between the Te Waihora Management Board representing Te Rūnanga o Ngāi Tahu, Ministry for the Environment, and CRC. The Memorandum set out a restoration plan for 2012-2016 and associated funding. The Memorandum sets out the following aims:

- Accelerate the restoration of ecosystem health of an internationally significant wetland, notable for its outstanding wildlife and native vegetation sites.
- Begin the process of restoring and enhancing specific cultural sites and mahinga kai.
- Protection and restoration of lake margin wetland habitats, existing indigenous vegetation and wildlife and restoration of specific lowland tributary streams and riparian habitats.
- Improved lake and catchment management practices by focusing on sustainable land use and drainage practices within the catchment.
- Establish a robust monitoring and investigations programme that ensures the lake response to management is understood and management activities are adapted accordingly.

5.10 Phase 1 of Whakaora Te Waihora has achieved a range of tangible environmental, cultural, economic and community outcomes within the Te Waihora/Selwyn catchment. The work programme focusses on six areas – Kaituna Ki Uta ki Tai, Halswell/Hiritini Ki Uta ki Tai, Waikekewai Ki Uta Ki Tai, improving in-lake habitat, lake opening management and protecting lake shore habitat. Achievements to date include:

- Planting of over 100,000 native plants and in conjunction with landowners there are proposals to plant a further 100,000 plants across all three initial focus tributaries in spring of 2014.
- Preparation of Farm Environment Plans (FEP) – 15 out of 22 farms in the Silverstream catchment have completed FEPs, 37 Fonterra Farms now have FEPs, and there is a commitment to complete 100 more before the end of Phase 1 (2016). The area covered by FEPs is currently around 8,900 hectares.
- Large scale willow eradication at six key lake margin sites
- Recontouring of 15 kilometres of major drains
- A pilot of instream riffle creation in the Halswell River

5.11 Investigations of the potential and efficacy of options to address legacy phosphorus issues in Te Waihora are also part of Phase 1 and complete[16]. Investigations to assess mahinga kai/biological health, alternative lake openings, the use of dredged channels, and ways to keep the lake at a more stable level are now complete. Other scientific work to assess the viability of planting macrophytes in the lake bed, fisheries recruitment and a detailed model of in-lake nutrient processing are progressing well.

[16] Te Waihora/Lake Ellesmere: Water quality remediation and ecosystem restoration opportunities. Report R13/111 (Gibb M, Norton N, 2013).

5.12 More recently, three further investigation projects have been approved under the Co-Governance Agreement between CRC, Te Waihora Management Board and Te Rūnanga o Ngāi Tahu and will be initiated in July 2014 under Phase 1 of Whakaora Te Waihora. Concepts for the projects came directly from ZIP Addendum recommendations. The projects involve mapping of riparian quality, spring heads and wetlands throughout the catchment and trial of floating wetlands.

5.13 The scientific work involves NIWA, Cawthron, and the Universities of Canterbury, Otago and Waikato. These agencies have also contributed further resources from other funding sources.

5.14 Catchment strategies have been developed with the communities of the Kaituna and Halswell catchments. Essentially, these strategies involve working with community members to develop a set of actions to which they are committed. For example, the Kaituna Catchment Management Strategy contains commitments to a riparian planting programme from the main highway to a named reserve by December 2014, and for all large farms (greater than 20 ha) to have farm environment plans in place by December 2014.

5.15 A Cultural monitoring programme has also been initiated under the Whakaora Te Waihora restoration programme. CRC is aligning and extending its monitoring of catchment hydrology, water quality, lake levels and stream/lake ecosystem health with the cultural monitoring.

Other existing Canterbury Regional Council Work Programmes

5.16 In addition to Whakaora Te Waihora, many of CRC's other work programmes respond to the recommendations in the Selwyn Waihora ZIP and its Addendum; most notably, in relation to land use and water quality; ecosystem health and biodiversity; and regional water infrastructure.

5.17 As part of implementing the CWMS, CRC has established a long term land-use and water quality programme. This programme is set out in the 2012-2022 Long Term Plan and now runs in all 10 CWMS zones. This programme involves a staff member - a land management advisor - dedicated to each Zone Committee to respond to recommendations for rural land use such as farm environment plans, nutrient budgets, irrigation collectives and catchment groups. A key part of this work programme is aligning the work of primary sectors and irrigation interests in a consistent approach to farm environment plans, water use efficiency and nutrient management. In the Selwyn-Waihora catchment, the work programme aligns with Whakaora Te Waihora and concentrates on the upper Selwyn Te Waihora catchment. CRC also has a similar work programme for urban waterways which focuses on stormwater, community catchment initiatives and management of discharges from industrial sites and subdivisions. This is particularly important in the Halswell catchment.

5.18 On the advice of the Canterbury Mayoral Forum when it promulgated the CWMS, CRC established an Immediate Steps Biodiversity Fund in 2010/11. This fund provides $100,000 annually to each of the 10 Zone Committees. The Fund requires at least a minimum one third contribution from land-owners, community groups or other organisations. As at March 2014, $724,870 had been approved for Immediate Steps Biodiversity projects in the Selwyn Te Waihora Zone. In addition to the funding to CWMS Zones, the CWMS Regional Committee has $240,000 annually to distribute to "regional biodiversity flagship" projects. Te Waihora is one of these flagship projects and the CWMS Regional Committee has allocated $540,000 to Te Waihora over the five years from 2010 to 2016. The funding is used for willow control and planting on public land on lake margins, and for weed control in the LII/Ararira. In addition to the Immediate Steps Biodiversity funding there have been significant contributions by a number of other groups and organisations through funding and staff or volunteer time such as Ngāi Tahu ($28,055), Department of Conservation ($51,160), Te Ara Kākariki: Greenway Canterbury, and individual landowners. Further biodiversity funding is available from CRC to support the Canterbury Biodiversity Strategy. This fund has provided $522,000 to the Selwyn Te Waihora catchment since July 2010. In combination, the $1.8 million allocated to this Zone from the above funding sources represents 38 kilometres of fencing and 70,000 plants (covering 14 hectares).

5.19 CRC also has a Regional Water Infrastructure Work Programme. The Programme works alongside irrigation developers to promote integration among proposals and alignment with the CWMS targets. An early focus of this programme was to understand how currently consented water from the Waimakariri, Rakaia and Rangitata Rivers could be used to more effectively deliver on multiple CWMS targets. More detailed investigations are now underway to progress potentially promising concepts in collaboration with scheme proponents and CWMS Zone Committees.

5.20 Other regional initiatives led by CRC under the Canterbury Biodiversity Strategy will contribute to delivery of the outcomes in the Selwyn Waihora ZIP. These involve trialling sand wands for sediment removal and a regional programme to remove fish barriers under the Canterbury Biodiversity strategy.

Existing initiatives – other parties

5.21 Both the ZIP and Whakaora Te Waihora recognise that the ability to successfully achieve outcomes depends on collective contributions from supporting partners including central and local government, landowners, industry, universities and education providers, non-governmental organisations and the wider community. There are many initiatives led by other public and private parties that contribute to the delivery of the ZIP Addendum recommendations. CRC, in partnership with Ngāi Tahu is committed to facilitating and co-ordinating all these activities. As an example, CRC and others have established the Selwyn Waihora Active Restoration Forum. This forum meets quarterly and has member organisations including Department of Conservation, Enviroschools, QE II Trust, Landcare

Trust, Waihora Ellesmere Trust, and Te Ara Kakariki (Greenway Canterbury Trust); all of whom have undertaken restoration work in the catchment.

5.22 As a further example, the Waihora Ellesmere Trust is a community organisation dedicated to the improvement of the health and biodiversity of Te Waihora/Lake Ellesmere and its catchment. Current and ongoing projects include facilitating the Te Waihora Partners Group, organising and hosting the biennial Living Lake Symposia, leading a Sustainable Drain Management Project, working with DOC/Fonterra in the restoration of a lake margin area, a leading role in organising the annual wetland bird survey of the lake, and being a partner in the Kids Discovery Plantout - a new initiative to encourage hands-on involvement of local schools in restoration. Funding sources vary from year to year and come from a number of sources, including an annual grant from Selwyn District Council, Department of Conservation, and the World Wildlife Fund.

5.23 Fonterra is spending NZ$1.3 million in the Selwyn Te Waihora catchment over the next five years to step up on-farm support, improve nutrient management practices, develop riparian planting plans and fund biodiversity research. Fonterra has also initiated a $20 million partnership with Department of Conservation to address water quality and biodiversity in five catchments throughout New Zealand – one of which is the Selwyn Te Waihora catchment. The current programme of work within the catchment involves a drain rehabilitation trial in partnership with Canterbury University and the Selwyn District Council Drainage Committee.

5.24 One of the major parts of the Zone Committee solution package is underway through the construction of the Central Plains Water Scheme. As outlined elsewhere in this section 42A Report, this infrastructure will bring alpine water into the Selwyn Te Waihora catchment which will result in the retiring of some groundwater takes and improvement of flows in lowland streams.

5.25 Another example of work in the catchment combining public and private initiatives, is the work to respond to the recommendation in the ZIP Addendum about managed aquifer recharge and targeted stream augmentation for environmental benefit. A pilot project is underway through CRC's work programme on Regional Water Infrastructure which involves both Selwyn District Council's and Central Plains Water's infrastructure. The project is investigating how currently consented stock water could be used in a more targeted manner to recharge groundwater and thus increase flows in the lowland streams between the Irwell River and Waikekewai. Selwyn District Council is currently reviewing the operation of its stock water race network, in part because of the opportunity to integrate stockwater provision into the Central Plains Water Scheme infrastructure. A concept is emerging that would see the Central Plains Water Scheme deliver water for targetted stream augmentation at times when it has available capacity in its pipes, and then the Selwyn District Council stockwater races would be used deliver water to the optimal recharge points. Selwyn District Council has already identified a potential recharge site on its land with additional sites under investigation to recharge the Irwell River system.

5.26 In addition, the recharge of deep groundwater very close to priority lowland streams is being investigated as a complementary water source for highly targted water quantity and quality support. Consent applications for a trial on Boggy Creek are also underway. There is ongoing involvement of the Selwyn-Waihora Zone Committee, Te Taumutu Rūnunga representatives, the Selwyn District Council Water Race Committee, Cental Plains Water, Department of Conservation, CRC, Selwyn District Council, and Te Runanga o Ngai Tahu.

5.27 Similarly to CRC initiatives, there are wider scale projects which will assist in future restoration projects. For example, the Mackenzie Foundation and University of Canterbury are developing techniques to enhance the benefits of riparian fencing and planting.

Future work programmes

5.28 While there is substantial work underway, CRC understands that the cultural and ecological restoration of the Selwyn Waihora catchment is a multi-decadal and multi-generational commitment, requiring future funding and resourcing at least as large as the existing investment. There is substantial and growing momentum for environmental restoration and riparian planting/restoration work in the Selwyn Te Waihora catchment.

5.29 CRC and Ngāi Tahu are committed to negotiate an ongoing work programme for restoration of Te Waihora and to continue to co-ordinate actions by all parties. Co-ordination will also occur through the Selwyn Waihora Action Restoration Forum and the Waihora Ellesmere Trust who support regular science forums to share learnings.

Phase 2 Whakaora Te Waihora

5.30 CRC and Te Rūnanga o Ngāi Tahu have taken the initiative to develop a joint programme for the next 10 years and are actively seeking and assessing options for funding this work. Many players are active and showing ever increasing commitments to invest in restoration and planting initiatives. Funding will come from public, private and community sources.

5.31 CRC and Te Rūnanga o Ngāi Tahu have developed a Phase 2 work programme for Whakaora Te Waihora – a work programme for 2016-2026. The partners seek to maintain the momentum of Phase 1, recognising the great contribution by the community of the catchment and intend to grow the programme of work and the partnership.

5.32 The key components of the Phase 2 work programme are:

- Maintaining the current initiatives and increasing the number of new initiatives to restore habitat and achieve biodiversity enhancement from the initial focus catchments into 40 key catchments including significant drains and waipuna/spring heads, primarily through 800 kilometres of riparian planting, predator pest and weed control and instream remediation and enhancement.
- Continuing to improve current land practices through extended farm management planning, catchment strategies and broadening support for landowners and catchment

communities to implement on-farm improvement measures across the whole lake catchment.

- Enhancing lake resilience to absorb legacy impacts by creating significant buffer areas through mid-catchment wetland re-establishment; lake margin protection; and retirement and enhancement of inlets and embayments for fish refugia, macrophyte establishment and mahinga kai.
- Implementing lake interventions investigated in Phase 1 for lake level control, nutrient processing and in-lake habitat creation - e.g. phytoplankton and nutrient interaction and salinity tolerance - by moving into the next stages of the design and development of lake opening and closing infrastructure, enhanced channelling, floating wetlands, macrophyte beds and in-lake islands.
- Implementing sediment traps, sandwand, and creation of riffle and refugia in streams.
- Developing new investigations for solutions to in-lake issues and monitoring of changes to enable, complement and support long-term restoration with a focus on nutrient interactions, salinity effects, aquatic invertebrate balance and operational water modelling.

Continuing Canterbury Regional Council work programmes

5.33 Existing CRC work programmes described above which respond to recommendations in the ZIP are shown as continuing under the 2012-2022 Environment Canterbury Long Term Plan. These sit alongside and complement Whakaora Te Waihora. CRC has just started work to prepare the 2015-2025 Long Term Plan which will be out for public consultation in March 2016. While the results of that process are not known at this point, early signals are that the support for work programmes that deliver on-the-ground tangible results is likely to increase. There is increasingly feedback through the CWMS processes about the need to increase resourcing for on-the-ground improvements. At its April 2014 meeting, the CWMS Regional Committee resolved "*To encourage Environment Canterbury to prioritise work on resourcing and funding options to increase the capacity of Environment Canterbury and sector groups to work with land owners on land use and water quality initiatives (e.g. providing for additional Land Management Advisors)*."

Investment needed

5.34 Responding to the recommendations in the Selwyn Te Waihora ZIP is, and will continue to be, a major focus for CRC CWMS-related work programmes. As part of its preparation for the 2015-2025 Long Term Plan, CRC has estimated the work needed across the region to implement the ZIP recommendations relating to biodiversity, water quality, water use efficiency and improved land management. The work includes raising awareness, using science to support/prioritise restoration action, environmental infrastructure (such as targeted stream augmentation), a system for monitoring progress, waterway enhancement, biodiversity restoration, farm environment plans, and nutrient budgets. The investment required in the Selwyn Te Waihora Zone represents about 25% of the investment needed across the whole Canterbury region. The investment is estimated in the Section 32 as $200million over 10 years.

5.35 The investment required is substantial. Both CRC and Ngāi Tahu are jointly committed to exploring options for funding and resourcing an ongoing and inter-generational work programme.

5.36 The role of public funding through the regional council will be assessed in discussions on the 2015-2025 Long Term Plan. CRC has already raised the possibility of new funding models. In the 2012-2022 Long Term Plan, the method for funding the openings of Te Waihora/Lake Ellesmere was changed to reduce the proportion paid by land owners adjacent to the lake. That change recognised that the lake level is now managed for a broader range of values than just land drainage. The funding was also increased to allow for extra lake openings for cultural and natural values. In its 2014-15 Annual Plan, CRC sought initial feedback on the possibility of zone rates. That is, setting up the Zone Committees as rating areas thus enabling the Zone Committee to make recommendations about local funding for specific projects that are above and beyond the existing investment in CWMS by CRC. There was mixed feedback and Commissioners will continue to consult during the development of the Long Term Plan.

5.37 Ongoing private investment will also be needed and has already grown in recent years. Fonterra, through its Community Investment in Water partnership, is just over one year into its partnership with the Department of Conservation. While these types of partnerships are likely to contribute substantial funding, there are also regulatory requirements to contribute funding, such as those contained in the resource consent conditions for Central Plains water, and in the National Water Conservation (Rakaia River) Amendment Order 2013 (which amends the National Water Conservation (Rakaia River) Order 1988)

5.38 Central Plains Water has made commitments, now contained in its consent conditions, to

- Ensure Farm Management Plans are prepared, produced, maintained and implemented for each property
- Contribute 12.5% of the annual costs incurred by the holders of any consent to open Te Waihora/Lake Ellesmere.
- Establish an Environmental Management Fund for the purposes of environmental mitigation and environmental management projects.

5.39 The National Water Conservation (Rakaia River) Amendment Order 2013 (which amends the National Water Conservation (Rakaia River) Order 1988) requires the operator of the Lake Coleridge Project to contribute $100,000 per annum funding for projects within the Rakaia River and Selwyn River catchments. The project must be designed to enhance the cultural, ecological, and biological health of, and recreational opportunities within, those catchments, and thereby contribute to the first order priorities set out in the Canterbury Water Management Strategy.

Summary

5.40 In summary, significant work programmes that implement the Selwyn Te Waihora Zone Committee ZIP recommendations are already underway, and there is a strong commitment in the public, private and community sectors to continue and increase efforts towards restoration. The major initiative is Whakaora Te Waihora. In its first few years, this programme has made substantial progress in planting, weed control, farm plans, and advanced the assessment of options for new and innovative ways to improve the health of the lake. Later stages of Whakaora Te Waihora seek to continue on-the-ground progress and to implement new and large scale actions to improve the health of the lake. CRC and Ngāi Tahu want to maintain the momentum of Phase 1 of Whakaora Te Waihora, recognising the great contribution by the community of the catchment and together CRC and Ngāi Tahu intend to grow the programme of work and the partnership. In addition to Whakaora Te Waihora, there are work programmes across Environment Canterbury on land use, water quality, regional water infrastructure and ecosystem health and biodiversity – all of which deliver on the ZIP recommendations. Many other parties have similar programmes of work.

6 Limit Setting Process - Technical Overview[17]

6.1 Several submissions assert that the science and modelling work undertaken to support the limit setting process resulting in Variation 1 is insufficient and is subject to a high degree of uncertainty.[18] In the following sections of this report we describe the process undertaken by the technical team to provide a fit for purpose assessment framework to support limit setting in the Selwyn Waihora catchment, key points of the assessment of the Zone Committee Solutions Package and explain how the inevitable uncertainties within a project of this nature have been managed.

6.2 However, before presenting any of the technical and modelling work that has been undertaken, it is important to understand the how the catchment works and what it is like now as all of the modelling and assessments have to be plausible in the light of the current measured state of the world and the conceptual model.

How the catchment works: The conceptual model

6.3 Figure 1 is a schematic of the Selwyn Waihora catchment. Rivers and streams in the hills in the west of the catchment are generally fed from overland flow and shallow subsurface flow. When these watercourses reach the plains they generally lose their flow to deep groundwater. It is assumed that this water does not resurface in the catchment, except the Selwyn River that sometimes flows all the way across the plains.

6.4 Drainage from the soil under the plains area is assumed to enter shallow groundwater. This shallow groundwater is assumed to resurface in the lower part of the catchment through a network of springs providing the baseflow for the lowland spring-fed streams (Clark, 2014; Hanson, 2014; Scott and Weir, 2014). This flow carries nitrate-N with it, and consequently the streams are influenced by groundwater quality and quantity. Considerable time (i.e. decades) can elapse between drainage water carrying nutrients being lost from the soil on the plains and when it resurfaces again in a lowland stream (Bidwell, 2009). Therefore there is an amount of nitrate-N that is already in transit, or 'in the post' that will inevitably arrive in the lowland streams at a later date, regardless of subsequent changes in land use practices.

[17] This section has been prepared by Melissa Robson.
[18] See Central Plains Water, Dairy NZ and others.

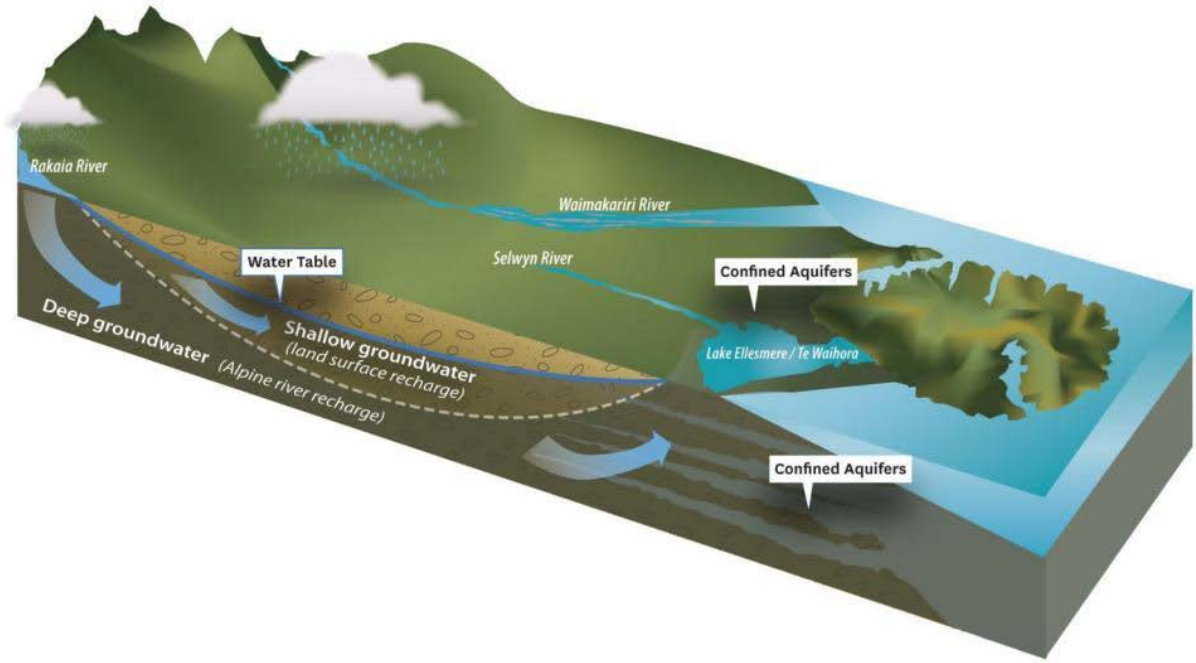


Figure 1A Schematic of Selwyn Waihora catchment

6.5 On the plains no denitrification is expected to occur as the nitrate-N drains from the base of the rootzone and moves through the groundwater. However, where the groundwater resurfaces denitrification may occur (Webb et al., 2010). In addition anoxic conditions in the groundwater in the lower portion of the catchment close to the lake can also facilitate denitrification (Hanson, 2014).

6.6 The two alpine rivers, the Waimakariri and the Rakaia, border the catchment to the north and south. They are assumed to form the hydrological boundary to the catchment and water and nutrients do not pass below them. They are also assumed to be losing water to groundwater as they flow across the plains influencing baseflows in the lowland streams, especially the ones nearby (Clark, 2014). This alpine water is characteristically low in nutrients and is uninfluenced by land use changes in the Selwyn Te Waihora catchment and therefore provides a dilution effect in the groundwater and some spring fed streams (Hanson, 2014).

6.7 In the lowland streams, a significant proportion of their nitrate-N comes from the plains area of the catchment via the groundwater. The converse is true for phosphorus, sediment and faecal bacteria. It is runoff from land, shallow subsurface drainage or direct discharges to waterways in the lower part of the catchment that is the source of the majority of the phosphorus, sediment and faecal bacteria.

6.8 For the lake, most of the flow is assumed to enter the lake via the waterways and only a small proportion directly from groundwater. There has been a build-up of sediment and phosphorus in the lake bed sediments, which has been lost from the catchment as a result of

past land uses. Due to the shallow nature of the lake this is continuously being re-suspended. The lake is periodically artificially open to the sea. Water also leaves the catchment by going directly out to sea as deep groundwater and is dominated by alpine water.

The current state of the catchment[19]

6.9 The lake is characterised by cloudy, brown/green coloured water, and has high levels of nutrients that give rise to algal growth. The scale used to assess lake condition in New Zealand is called the Trophic level Index (TLI) [20]. Te Waihora/Lake Ellesmere sits currently at approximately 6.8 (Figure 2d). There are no regular toxic cyanobacteria or other algae blooms despite risk associated with the high nutrient state. The lake has reduced species richness compared to its pre-European state but nonetheless has highly valued current biodiversity (i.e. wetland plants, invertebrates, fish) and the highest recorded bird diversity of any location in NZ (Norton, 2014). Mahinga kai in and around the lake is currently adversely impacted by the lake condition, Figure 2e, (Tipa, 2014).

6.10 The lake is periodically open to the sea and therefore varies in how salty it is. The lake height is currently managed through lake opening/closing to protect wildlife habitat while recognising the needs of farming. Opening to the sea in the spring and autumn is important for fish passage and recruitment but is currently considered to be unlikely to support optimal migration and spawning requirements for important species. The macrophyte or aquatic weed populations around the lake edge have been absent in the recent past notably since the Wahine storm. These macrophyte beds are considered important for physical stabilisation of the lake margins and improvement of habitat and water clarity (Norton, 2014).

6.11 The flows in the lowland streams of the catchment are mainly derived from groundwater coming to the surface via springs, although some[21] also are influenced by the large alpine rivers and tend to have higher base flows. The long term flow trend in many of the lowland streams has been impacted by the long term effects of abstraction and long term climate variability, especially those without much impact from the alpine rivers. Figure 2f illustrates this impact using data from the Selwyn River. There are data from two sites on the Selwyn River, one at the top of the river (Whitecliffs) and one at the bottom of the river, near the lake (Coes Ford). The variation from year to year impacts both sites and is driven by climatic variation. However, from the late 1990s there is evidence of a trend of lower low flows in the Coes Ford site compared with upstream. This trend is caused by abstraction of groundwater in the catchment, (Clark, 2014). Groundwater abstraction[22] for irrigation in the

[19] The current state draws on Robson, 2014; Scott and Weir, 2014; Clark, 2014; Kelly, 2014; Hanson, 2014; Golders, 2014; Norton et al., 2014; Tipa, 2014; Harris, 2014; Taylor et al., 2014

[20] TLI is a classification system to indicate the health of New Zealand lakes. It runs from less than 1 (almost pure water) to more than 7 (highly nutrient enriched)

21 E.g. Halswell River, LII River and Jollies Brook

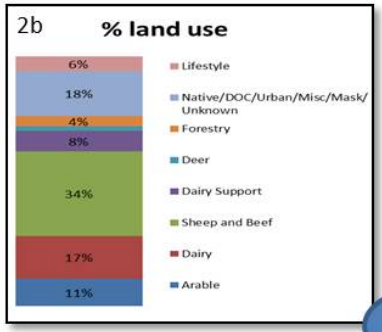
22 Based on consents

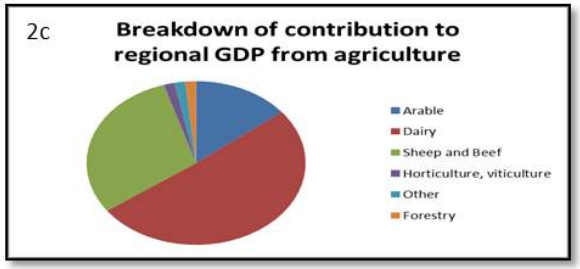
Selwyn-Waihora catchment[23] has increased steadily over the last few decades and has, in some recent years, approached or exceeded the volume of recharge to groundwater through drainage, Figure 2g.

6.12 All of the monitoring sites for surface water flowing into the lake have moderate to high levels of phosphorus except Harts Creek. For most sites there has not been much of a change in Dissolved Reactive Phosphorus (DRP) over the past 10-20 years. For nitrates, the 'Level of Biodiversity Protection' indicates what proportion of aquatic life we should expect generally to be protected from chronic nitrate toxicity in current conditions. Only the Kaituna River meets the revised 99% level of protection and all of the sites meet the revised 80 % level of protection. The nutrients nitrogen and phosphorus are important factors (although not the only factors) in determining how many aquatic plants grows in the streams. Figure 2h shows the average annual maximum plant cover, and the average annual maximum algae cover recorded over the past 6-7 years. When the recommended maximum % cover is above pLWRP objectives (shown red), there is an increased risk of negative impacts on other aquatic life and/or amenity values, (Golders, 2014; Kelly, 2014). The condition of lowland streams is not considered as safe for gathering mahinga kai and the cultural health in the streams is unlikely to be maintained by current practices, Figure 2e, (Tipa, 2014).

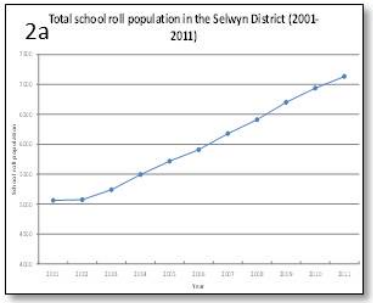
6.13 Nitrate-N is transported into the groundwater by water from rainfall or irrigation that percolates through the soil. Currently, the average nitrate-N concentrations in the monitor wells network in Selwyn Te Waihora catchment are just over half of the drinking water standard[24]. Occasionally there is a peak in groundwater concentrations above the drinking water standard shown as a red dot on Figure 2i, but it is usually temporary. In general, the concentration of nitrate-N in groundwater in the Selwyn-Waihora area is increasing, but the increase is not smooth (Hanson, 2014). There appears to be increasing trends in about a third of the wells that are monitored, Figure 2j, and the rate of increase varies from one well to another. Concentrations at a given location can vary considerably over the course of a year and these short-term variations can mask long-term trends. It needs to be noted, however, that nitrate-N concentrations will not increase indefinitely. They will reach a plateau as leaching rates from the land surface reach a maximum. The nitrate-N that leaches from the plains to the groundwater is eventually discharged to the spring-fed streams and the lake.

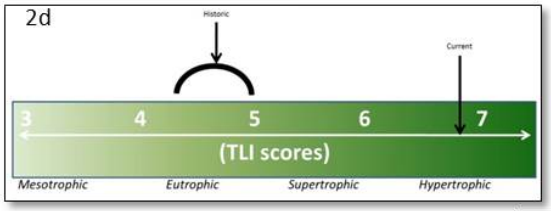
23 Graph shows information from Canterbury Plains which includes Selwyn Waihora
24 The average is calculated from Environment Canterbury's monitoring wells (approximately 30 wells monitored regularly)



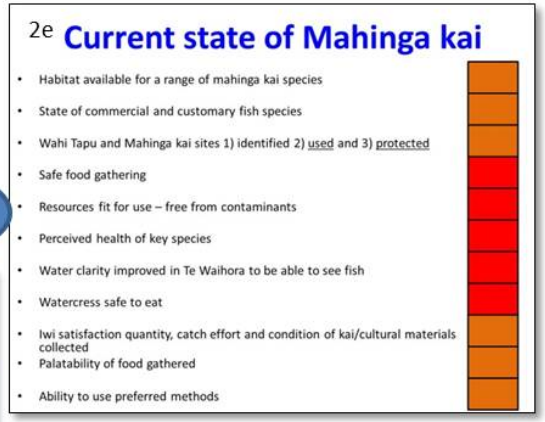


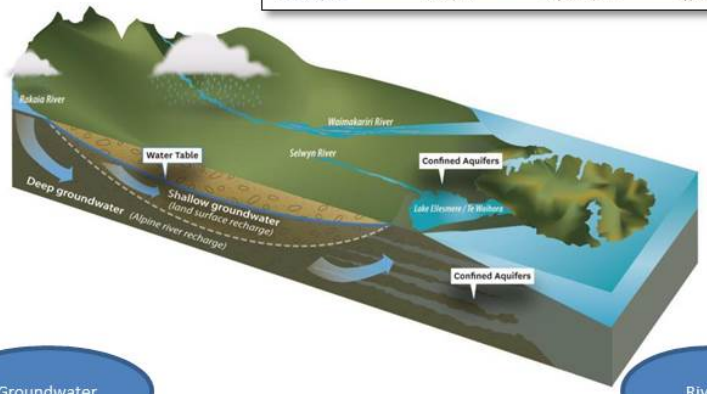
Socio-economic

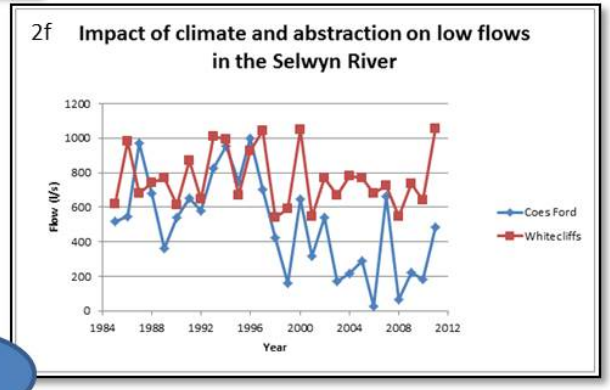




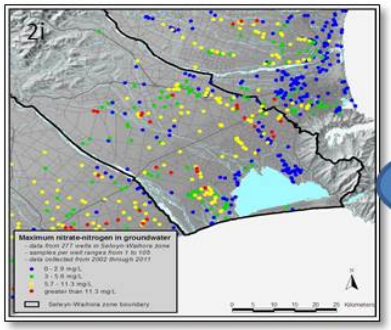
Lake



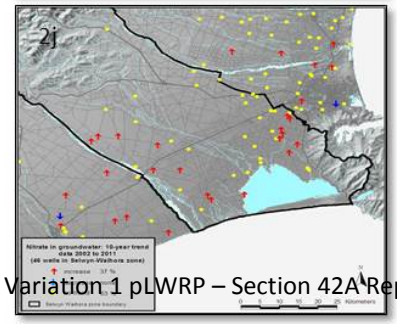


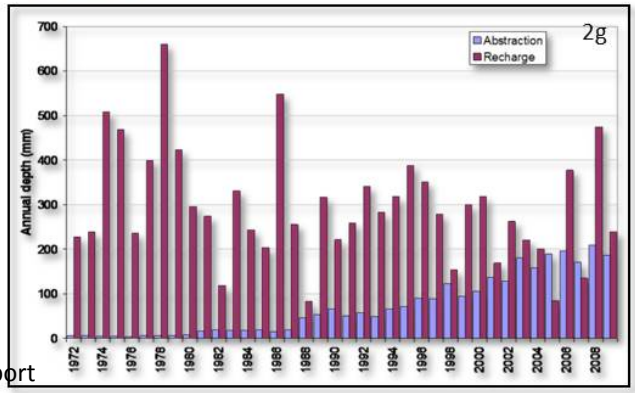


Rivers



Groundwater





2h Site name	Observed Average annual maximum aquatic plant cover	Land and Water Regional Plan maximum cover	Observed Average annual maximum filamentous algae cover	Land and Water Regional Plan maximum cover
Kaituna	98	No value set	15	20
Halswell River	80	50	3	30
L II Stream	91	50	41	30
Selwyn Coes Ford	24	50	45	30
Irwell River	64	50	79	30
Hanmer Rd Drain	64	50	21	30
Boggy Creek	58	50	35	30
Doyleston Drain	65	50	45	30
Harts Creek	79	50	3.5	30
Waikekewai Creek	85	50	58	30
Lee River	87	50	15	30
Jollies Brook	57	50	3	30

Process adopted

6.14 The limit setting process in Selwyn Te Waihora has followed the overarching principles of the preferred approach[25], while learning and modifying aspects along the way. Figure 2 is a schematic of the steps used in the Selwyn Te Waihora limit setting process. The sections that follow contain a brief explanation of the establishment of community values, the building of the assessment framework and the technical assessment of the Zone Committee's Solutions Package (ZCSP).

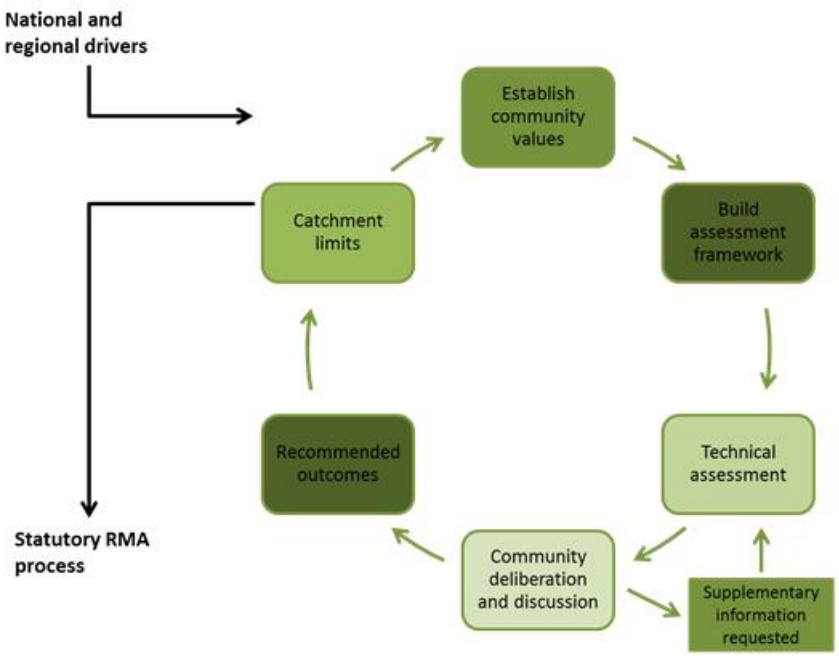


Figure 2 Schematic of the approach for setting water quality and quantity limits used in the Selwyn Te Waihora catchment

Establishing Community Values

6.15 As required by the CWMS the Selwyn Waihora Zone Committee developed a ZIP (SWZC, 2012). The CWMS outlines high level regional outcomes across ten target areas: economic, social, cultural and environmental. For each of these target areas, the Zone Committee developed a set of priority outcomes and sub-outcomes for their zone. Not all of the outcomes in the ZIP were relevant to the project area or the limit-setting process (Robson, 2014). Those that were included in the assessment are shown in Table 1.

[25] Environment Canterbury, 2012. The preferred approach for managing the cumulative effects of land use on water quality in the Canterbury Region: a working paper. ECan report R12/23. The preferred approach was agreed and endorsed by the Canterbury Regional Council Commissioners

Table 1 Selwyn Waihora Zone Committee Zone Implementation Programme outcomes included in assessment

Selwyn-Waihora Zone Committee Priority Outcomes	Sub-outcomes
a. Thriving communities and sustainable economies	- Sustainable and productive land use - Energy security is increased - Customary and commercial fisheries are improved - Secure water supply to provide a target of 95% reliability for irrigation
b. High quality and secure supplies of drinking water	- All domestic drinking water meets national standards preferably without treatment within 10 years
d. Kaitiakitanga is integrated into water management in the zone	- Wāhi tapu and mahinga kai are protected and enhanced (used as priority outcome)
e. Healthy lowland streams	- Water quality, flows and habitat supports increased abundance and diversity of aquatic life - Safe and plentiful food gathering is available - Nutrient inflows decline over time to acceptable levels
f. Te Waihora is a healthy ecosystem	- There are healthy macrophyte beds and water clarity is Improved - Fish recruitment and food gathering on and around the lake is improved - Nutrient inflows decline over time to acceptable levels - Recreation opportunities are improved
g. Hill-fed waterways support aquatic life and recreation	- Popular swimming places meet contact recreation standards - Flows are sufficient to provide for swimming at popular swimming places - Flows support aquatic life and fish passage
i. Enhanced indigenous biodiversity across the Zone	- No further loss of indigenous biodiversity habitat and ecosystems - Wetlands associated with hill fed river flows are protected and restored - The wetlands of Te Waihora are enhanced

The Assessment Framework

6.16 The assessment framework is made up of four key elements:

- Assessment of scope and boundaries
- Models or technical assessments
    - Biophysical
    - Social
    - Economic
    - Cultural
- Indicators
- Scenarios

6.17 The following sections will describe each of these elements in more detail. There is also a section on uncertainty and the steps taken to create a fit for purpose assessment framework.

Assessment of scope and boundaries

6.18 The scope of the technical work was determined by the community's priority outcomes and sub-outcomes, covering environmental, economic, social and cultural aspects. This original scope was then modified by:

- Time constraints, meaning that existing models needed to be used or adapted where possible and where no model existed, simple models were built. Specific climate change modelling was not included (see Robson, 2014)
- The availability of assessment techniques and robust indicators needed in order to test the scenarios.

6.19 The project area is the Te Waihora/Lake Ellesmere catchment plus the Little Rakaia zone, Figure 3. Within this project boundary the area can be divided into several areas; hill country (above 15° slope), the little Rakaia zone, the Kaituna catchment and the plains area.

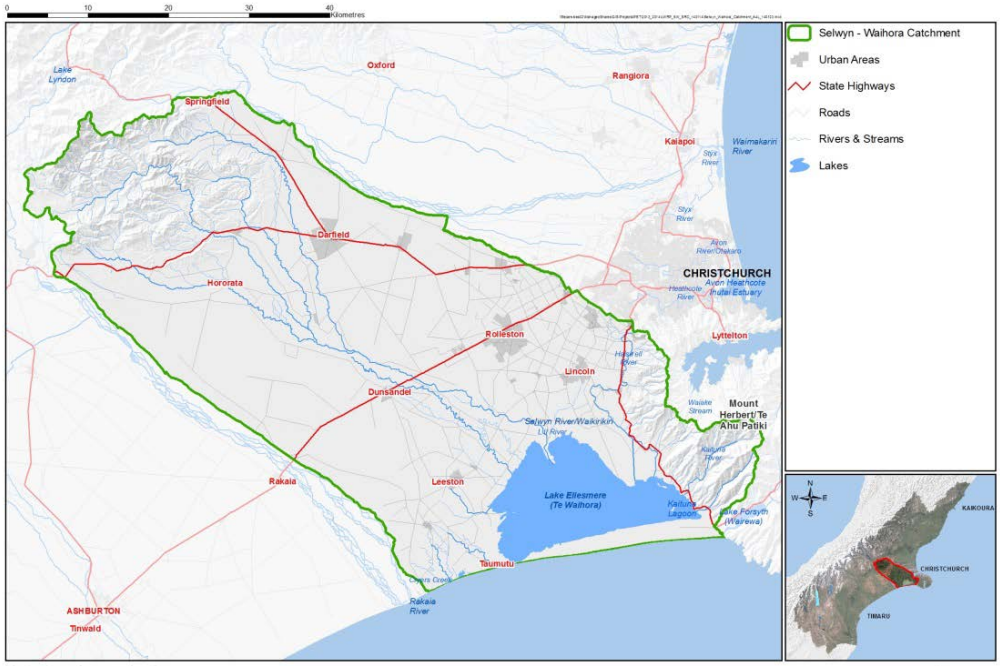


Figure 3 Map showing the Selwyn Waihora project boundary. Source CRC

6.20 There are three key water bodies or receiving environments in the Selwyn Te Waihora catchment:

- Groundwater
- Rivers and streams
- Te Waihora/Lake Ellesmere.

6.21 A suite of monitoring sites was used as reference sites where the effects of scenarios on each of the receiving water bodies were described (Robson, 2014)

6.22 The catchment models available at the time of this work were not able to adequately characterise phosphorus, sediment or faecal bacteria loss pathways to water for this catchment. However, they are important in the assessment of impacts of scenarios on various receiving environments. The assumptions for phosphorus faecal bacteria and sediment for each scenario are described in Robson (2014).

Model/assessment choice, set up and calibration

6.23 The conceptual understanding of how water and nutrients move through the catchment described above was discussed between the technical team and Zone Committee and wider community and helped inform and guide the modelling approach.

6.24 Detailed description of the models and assessment techniques used are referenced in Appendices 9-18 of Robson (2014). A brief outline of the whole modelling approach (biophysical, social, economic and cultural) is given here.

Biophysical modelling

6.25 The biophysical modelling aims to predict what the physical and environmental outcomes will be from changes in land use. The Selwyn Te Waihora catchment is relatively complex and therefore a series of models have been 'bolted together' and used to trace the effects of changes in land use through to those impacts in groundwater, surface water and the lake. The biophysical modelling chain can be broken into 4 stages, Figure 4.

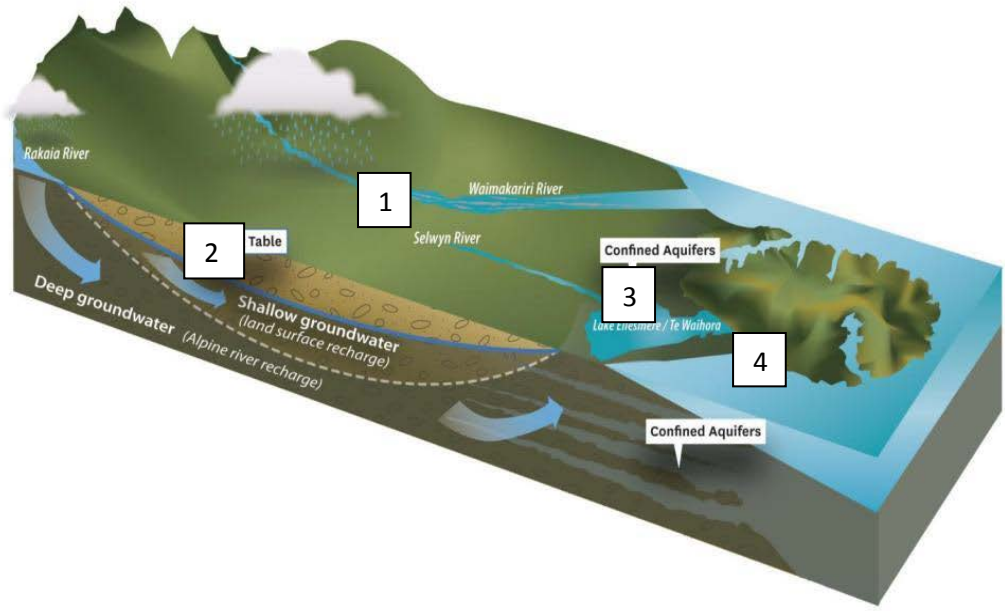


Figure 4 A schematic diagram of the Selwyn Waihora catchment. The numbers represent the stages of the biophysical modelling

Stage 1 Land and climate

6.26 A series of GIS[26] layers was created (Hill, 2014) that capture soil type, rainfall, land use, irrigation, drainage and nitrate losses. Soil type information was sourced from S-MAP[27]. Land use information was derived from AGRIBASE[28] survey data, and was modified according to land use change rules developed for each scenario (Robson, 2014 Appendices 2-5). The extent of irrigation was derived from remote sensing data and the CRC consents database (Hill, 2012); drainage and nitrate losses are based on the Lookup Tables (Lilburne et al., 2010; Lilburne, 2013).

Stage 2 Groundwater

6.27 Groundwater flow was initially modelled using two separate models[29]. Due to calibration issues with the MODFLOW model, only the FEMWATER model was used throughout all of the scenarios. The FEMWATER model has been calibrated using measured flows and groundwater levels (Scott and Weir, 2014). To test the different scenarios, the groundwater flow model takes the land use information from stage 1 and predicts drainage water losses from those land uses. These losses are routed through the groundwater system and some reappear in the spring fed streams further down the catchment and are termed 'baseflow'.

6.28 The groundwater quality model uses the estimated nitrate-N losses (as concentrations) from the land use in stage 1 to predict the groundwater quality in the shallow aquifers (Hanson, 2014). The nitrate-N concentrations in the shallow groundwater are assumed to be the same concentration as the drainage from the soil, in other words no denitrification, dilution or other attenuation is assumed as the nitrate-N travels through the unsaturated zone and through the groundwater system on the plains.

Stage 3 Surface water

6.29 For lowland spring flows, the groundwater model predicts baseflow at each of the modelling points (Scott and Weir, 2014). Another model predicts 'quickflow', which is the proportion of water in the streams that is generated from overland flow and shallow drainage in the lower portion of the catchment (Clark, 2014). Separate studies have been carried out on minimum flows in the catchment's streams, outlining what the current minimum flows protect for, and recommending what the minimum flow should be from an ecological (Burrell, 2011) and a cultural (Tipa, 2013) point of view.

6.30 To predict nitrate-N concentrations in the streams an attenuation factor was established for each of the modelled streams and rivers by comparing measured surface water

[26] Geographical Information System (GIS) is a way to capture, manage and present all types of spatial data, like maps.
[27] http://smap.landcareresearch.co.nz/
[28] AGRIBASE is a system run by AsureQuality for capturing information on all types of rural properties. Information is collected annually on aspects such as property size, management operations, land use and stock numbers.
[29] MODFLOW was run by Environment Canterbury and FEMWATER was run by Aqualinc Research Ltd

concentrations and overall shallow groundwater concentrations. This factor would include dilution, denitrification and other attenuation processes. This factor was applied to modelled groundwater concentrations for each scenario to give predicted surface water nitrate-N concentrations (Hanson, 2014).

Stage 4 Te Waihora/Lake Ellesmere

6.31 The lake quantity model uses the flow information from stages 2 and 3 to predict the impact that changes in flow will have on the lake levels and the opening and closing regime. The lake quality model uses quality information from stage 3 and lake flows from stage 4 to predict the ecological response of the lake. The model predicted effects on a suite of indicators including nutrient concentrations, risk of algal blooms, likely impact on biodiversity and Trophic Level Index[30] (TLI).

Social impact assessment

6.32 Any form of environmental or economic change in an area will have implications for people who live, work and recreate there. Some of these changes are tangible and some are not. The social impact assessment (SIA) identified the potential positive and negative social effects for people affected by predicted changes. The two main components of the SIA were:

- To develop a baseline of the current socio-economic context
- To undertake an impact assessment of each of the scenarios and predict the consequences of the change on the social indicators

6.33 The social assessment (Taylor, 2014) utilised information from biophysical, economic (on farm and regional) and the cultural scenario assessments.

Economic impact assessment

6.34 The economic impact assessment used a combination of farm scale and regional scale economic models to predict the consequences of different land use scenarios.

6.35 A set of revenue, expense and cash farm surplus estimates were derived from MAF farm monitoring reports (last 3 years) and were adjusted where required, see Harris (2014).

6.36 Estimates of regional outcomes from changes in agricultural land use were assessed using a regional input/output table model. The outputs generated include regional GDP and employment, revenue and profit, capital expenditure, taxes and population.

[30] TLI is a classification system to indicate the health of New Zealand lakes. It runs from less than 1 (almost pure water) to more than 7 (highly degraded)

Cultural assessment

6.37 An assessment of Ngai Tahu cultural values was undertaken by Tipa and Associates. The predictions of cultural health under each scenario were tested and agreed with Ngai Tahu whakapapa prior to going to the technical team, the community and Zone Committee. The assessment draws from the perspectives of tangata whenua articulated in published management plans, evidence presented at hearings and lake reports (Tipa, 2014). In addition, whanau from the kaitiaki Rūnanga actively engaged in assessing river flows and cultural health as part of a concurrent COMAR[31] study.

6.38 These primary and secondary sources inform about the current situation. For future scenarios, others in the technical team modelled and predicted the likely biophysical, social and economic changes. The cultural assessment then interpreted those changes and predicted likely impacts on cultural health and the eco-cultural system (Tipa, 2014) on which cultural values depend.

On farm assessment

6.39 On-farm information was derived from a variety of sources and was presented to the Zone Committee and community focus groups. The key types of information used were on farm nitrate-N losses, the cost and efficacy of nutrient loss reduction measures across a range of farm types and soils and the maximum feasible mitigation across farm types and associated financial implications. This information was used in the modelling as well as directly by the Zone Committee and community focus groups.

6.40 Farm losses of nitrate-N were based on the lookup tables[32]. The estimated maximum feasible mitigation percentages for different land uses and their associated costs were based on multiple sources of information. This information has been included in Appendix 8 of Robson (2014).

Model integration

6.41 Where pre-existing biophysical models were being used, the technical team needed to look closely at model integration. These models had been built for different purposes and calibrated separately and therefore there was the potential for conflicting assumptions. An exercise was conducted at the start of the project to highlight any conflicting assumptions. The main conflicting assumption identified was the groundwater recharge from soil. This has been discussed in both Hanson (2014) and Scott and Weir (2014).

[31] Tipa, 2013

[32] The original Look up Table (2010) was ultimately derived through a combination of data sources comprising modelling, lysimeter data, and expert judgment. The tables were arrived at as a consensus between experts. There were concerns raised at the time with some of the farm systems used. OVERSEER v5 was not ultimately used in the formation of the tables due to its limitations in modelling losses from shallow and stony soils. In 2012 a new version of OVERSEER was released with significant updates to the underlying modelling framework. The lookup table patch was generated from a re-running of the original pastoral farm files in the new version of Overseer. As anticipated, this has resulted in higher leaching estimates on some shallow and stony soils than had been predicted under previous versions of the model.

Managing uncertainty and creating a 'fit for purpose' assessment framework

6.42 Setting outcomes and natural resource limits for catchments and deciding on the available capacity for resource use is not simply a technical question. These decisions are value judgements that involve weighing up, trading off, and balancing between conflicting outcomes and values. The key role for the technical team in this process is one of supplying sufficient relevant and credible information that has been legitimately gathered[33], analysed and presented to a community and zone committee in a way for it to understand the connections and make recommendations in the knowledge of the likely consequences on other aspects of the catchment – i.e. to make an informed value judgement. This shift also means that an understanding of the inevitable uncertainty of the science or limited information is integral to the nature of the decisions being made, and is not used as a reason for not making them.

6.43 There are many sources of uncertainty in a limit setting process such as for Selwyn Te Waihora. There may be uncertainty in the input sources of information, the fundamental understanding of the dynamics of some aspects of the catchment, the numeric models and assessment techniques used to make predictions. Where possible the uncertainty associated with individual technical assessments has been discussed in the technical reports. However, no quantitative assessment of overall uncertainty of the scenario predictions has been attempted. Therefore, in order to help the Zone Committee and the wider community make informed value judgements, recognising the uncertainty that exists in the technical work, the expectations of the technical team were to:

- Describe the direction of change and likely magnitude of change under future scenarios
- Predict the likelihood of outcomes being achieved for each of the future scenarios

6.44 At a project level, the following methods were used to establish a fit for purpose assessment framework:

- Involve the community in the setting of priority outcomes and scenarios, and agreeing indicators and assumptions for modelling and scenarios
- Use best information available at the time of assessment
- Agree a conceptual understanding of how the catchment worked hydrologically with the technical team and stakeholders
- Base assessments on a logical framework
- Calibrate individual model components where possible
- Use independent advice and review through initial modelling set up and building of assessment framework

[33] Cash et al., 2003

- Examine the outputs from each model component for sense and plausibility before passing information on through the chain (including review of relevant literature if applicable)
- Test and review the scenario results with the technical team before they are released to public, so that the technical team collectively agree the interpretation of the scenario results
- Use a multiple lines of evidence approach where possible
- Use sensitivity analyses to understand the impact of uncertainty in some assumptions e.g. land use configuration
- Open up modelling and assessment components and assumptions to the community and stakeholders
- Provide regular opportunities to the community to talk with the technical team
- Make scenario assessment information available to the community at three differing level of complexity and detail
- Make all the relevant information publically available on the website including all underlying technical material and a cumulative question and answers document
- Communicate uncertainty in terms of likelihoods of outcomes being achieved
- Maintain an open and positive attitude toward good quality data and assumptions from sources outside of the technical team

Indicator development

6.45 Each of the scenarios was tested against the Zone Committee's priority outcomes and sub-outcomes. The relevant outcomes, as articulated in the ZIP were often not in a form that could be used or modelled directly; therefore the technical team developed a suite of indicators for each outcome.

6.46 The indicators were developed in a two stage process. First, the Zone Committee was asked to describe what its outcomes and sub-outcomes would look like for the catchment. These descriptions were formalised into a narrative for each sub-outcome and provided to the technical team. Secondly, Indicators were developed by the technical team that gave the best information on the issues expressed by the Zone Committee within the bounds of the assessment framework. The full set of indicators was then tabled with the Zone Committee and accepted. Some indicators were used for multiple or different outcomes and sub-outcomes. The full list of indicators used is included as Appendix 1 in Robson, 2014.

Scenario development

6.47 The final component of the assessment framework is the scenarios. Scenarios examine various alternative futures and were used to increase understanding of the catchment and to facilitate discussions among all parties with an interest in the future management the catchment's water resources. The scenarios used in the process can be divided into 2 types; initial exploratory scenarios and two solutions packages. The initial exploratory scenarios were derived from the Selwyn Waihora ZIP aspirations of further irrigation expansion and

delivery of environmental goals. The content of the scenarios was agreed with the Zone Committee and in a wider public forum (Scenarios 1, 2 and 3). A subsequent exploratory scenario was then developed in response to feedback from wider community focus groups and the Zone Committee (Scenario 2+).

6.48 Once the scenario testing phase was over, the individual elements of a solutions package were chosen, assembled and tested (Solutions Package 1). This package of measures was reviewed by the Zone Committee, Ngāi Tahu, community and industry groups, and modified based on their feedback. The Zone Committee formally agreed on the amended package, the Zone Committee Solutions Package.

6.49 The full list of scenarios modelled is shown in Table 2. Only the results of the Zone Committee Solutions Package are discussed further in this report. The full assumptions and outputs associated with the other scenarios and the first Solutions Package are not presented here, but are included in Robson (2014).

Table 2 Summary of scenarios tested

Scenario name	Description
Current state	The current scenario describes what people see and experience now across social, economic, environmental and cultural areas. It includes the current biophysical state of the catchment water bodies as described by existing data.
Scenario 1 (baseline)	Assumes no change to current (2011) land use. All flow and nutrient load effects are assumed to have arrived at the lake (i.e. after all lag times). Social and economic are assumed to be the same as current.
Scenario 2 (30,000 ha additional irrigation)	This scenario is based on a surface water supply providing for 60,000 ha of irrigation. This will comprise approximately 30,000 ha of new irrigation on the plains and replacing of approximately 30,000 ha of groundwater takes with surface water. The scenario recognises that other enterprises and land uses in the catchment will also intensify. All flow and nutrient load effects are assumed to have arrived at the lake (i.e. after all lag times).
Scenario 3 (TLI 6)	This scenario is based on achieving the specified environmental outcome of a Trophic Level Index (TLI) of 6.0 in the Lake. A TLI of 6.0 was the Natural Resources Regional Plan[34] (NRRP) target for the lake. All flow and nutrient load effects are assumed to have arrived at the lake (i.e. after all lag times).

[34] The NRRP was the operative regional plan at the time

Scenario name	Description
Scenario 2+ (Bolt-on mitigations)	This scenario is based on Scenario 2 with 30,000 ha of new irrigation plus maximum feasible on-farm mitigation. Some catchment and lake interventions have been assumed (i.e. a lake level and opening control structure and P-inactivation measures). All flow and nutrient load effects are assumed to have arrived at the lake (i.e. after all lag times).
Solutions Package 1	The Solutions Package 1 is based on Scenario 2 with 30,000 ha new irrigation plus on-farm nutrient reduction measures. The on farm mitigation is set at a level mid-way between good management practice and maximum feasible mitigation. The package includes catchment mitigations (riparian buffers and wetlands), further lake interventions (i.e. a lake level and opening control structure, P-inactivation measures, macrophyte bed and marginal wetland restoration, and construction of floating wetlands), as well as economic/social mechanisms, point source pollution control, and planning policies. All flow and nutrient load effects are assumed to have arrived at the lake (i.e. after all lag times).
Zone Committee Solutions Package	The Zone Committee Solutions Package is based on Scenario 2 with 30,000 ha new irrigation plus on-farm nutrient reduction measures. At a catchment level the on farm mitigation is set at approximately mid-way between good management practice and maximum feasible mitigation. All plains areas have a minimum allocation of 15 kg N/ha/year to allow low leaching land use some increased flexibility. Land uses losing > 15 kg N/ha/year must reduce nitrogen losses by fixed percentage. The actual mitigation requirements are based according to impact on EBIT. The package includes catchment mitigations (effective riparian buffers and wetlands), further lake interventions (i.e. a lake level and opening control structure, P-inactivation measures, macrophyte bed and marginal wetland restoration, and construction of floating wetlands), as well as economic mechanisms, point source pollution control, further research on mitigations and planning policies. All flow and nutrient load effects are assumed to have arrived at the lake (i.e. after all lag times).

Technical assessment

Flow of information through technical team

6.50 Figure 6 shows the flow of information through the technical team. The social, economic and cultural assessments are placed in the middle as they all depended on the biophysical information. See Appendix C for biographies of each member of the technical team. A single scenario would take approximately 11 weeks to run through all of the assessments. Once each individual assessment had been completed the results were sense checked. Problems that arose were dealt with and if necessary the individual model rerun before passing the data to the next stage of the modelling chain.

6.51 For each component model or assessment a technical assessment was written for each scenario. Where necessary this was supplemented with a narrative to describe the predictions of the scenario to enable other members of the technical team to use them as part of their assessments. An overview was written for each scenario based on these technical assessments and all were made available on the Selwyn Waihora public website[35].

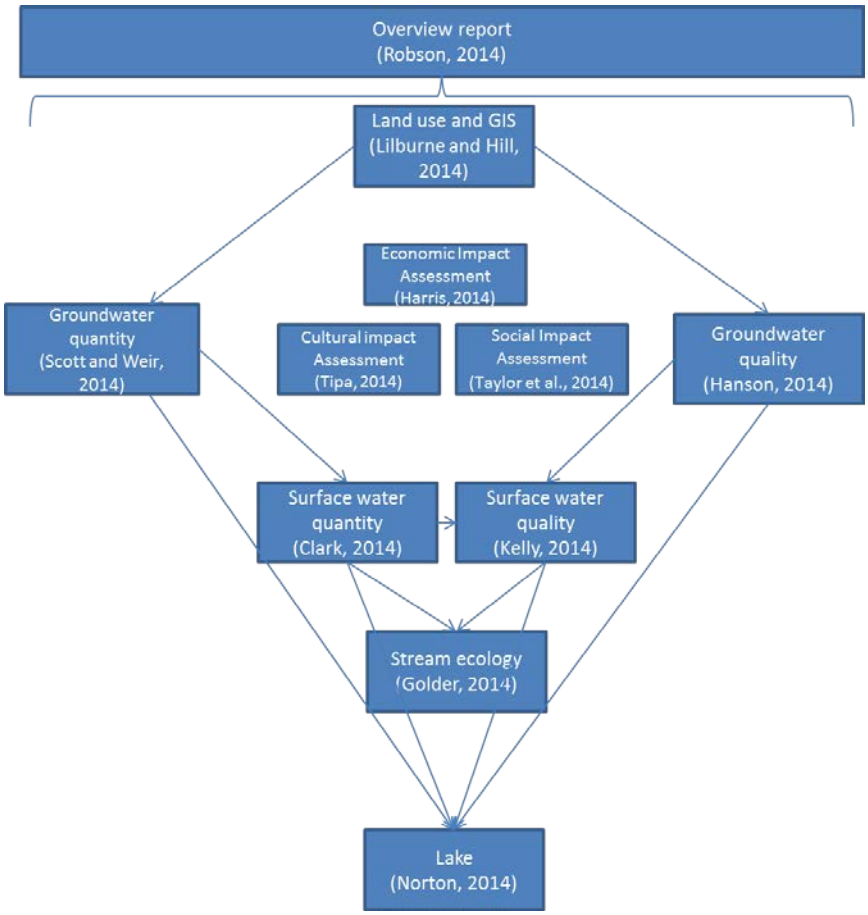


Figure 6 A schematic showing the flow of information within the Selwyn Waihora technical team and the associated technical reports

[35] www.ecan.govt.nz/selwyn-waihora.

Assessment of scenarios and communication of uncertainty

6.52 The aim of each assessment was to describe the direction and likely magnitude of change and support a narrative of the likely implications and likelihood of achieving the priority outcomes. The assessments were built up from specific indicators to sub-outcomes and finally to outcomes.

6.53 In principle the predicted likelihood of an outcome being met depended on the predicted impact at the indicator and sub-outcome level. However, in considering whether or not specific outcomes were likely to be met, the technical experts implicitly weighted the relative importance of individual indicators contributing to an outcome. Where the priority outcomes were themselves a value judgement (e.g. 'healthy' or 'sustainable') this required a value judgement by the technical expert in question. For the social and economic assessments, this value judgement was not considered as appropriate, and a relative change from current was assessed instead.

6.54 The following categories were used to describe the likelihood of achieving a particular outcome or indicator. These colours and terms are used throughout the Overview Report in the tables used to describe the likelihood of each scenario supporting each sub-outcome and outcome.

Table 4 Likelihood categories used in the assessment of scenarios against indicators, sub-outcomes and priority outcomes

Likelihood of outcome being achieved	Almost certainly	Probably	Possibly	Unlikely	Highly unlikely/ no
Indicative numeric likelihood out of 10	9,10	7,8	4,5,6	2,3	0,1
Likelihood of change relative to current	Significantly improved relative to current	Probably improved relative to current	Possibly improved relative to current	Unlikely to improve/no change relative to current	Worse relative to current

6.55 Before releasing each scenario analysis, an overview report was written integrating and summarising all the technical work and the implications for the catchment outcomes. The full technical team would review the analysis in a workshop, resolve any issues in the integrated report and agree the interpretation of the scenario.

Provision of information to Zone Committee and community

6.56 For each scenario, the results were presented in the following ways:

- Technical summaries, detailing all technical information for the scenario, were generally available on the public website just prior to public meetings/Zone Committee meetings. (Complex level)
- Overview summary, summarising all of the technical material and written for the general public. The report was pre-circulated by email and available on the website in the week prior to public meetings/Zone Committee meetings (basic –intermediate level)
- A high level summary presentation of technical material for public meeting/Zone Committee. A copy of the presentation was placed on the website after the public meeting (basic to intermediate level)
- A brief 2 page summary of all technical as well as deliberation information was placed on the website after each public meeting (basic level)
- In addition, questions and answers sessions with the technical team were held prior to the community meetings for the community focus groups and interested Zone Committee members. A questions and answers session was also run after the overview presentation during public meetings. The Zone Committee meetings themselves were supported with the relevant technical people throughout the process. In addition, monthly clinics for the community focus groups with the technical, planning and community leads were run as a further opportunity for people to raise issues and ask questions.

The Zone Committee Solutions Package

6.57 Table 5 shows the likelihood of current, scenario 1 baseline and the Zone Committee Solutions Package supporting the Zone Committee's priority outcomes

Table 5 Likelihood of current, Scenario 1 baseline and the Zone Committee Solutions Package supporting the Zone Committee's priority outcomes

Priority outcomes	Current	Scenario 1	Zone Committee Solutions Package
	Does the scenario support priority outcomes?		
Thriving communities and sustainable economies	Possibly	As current	Probably improved from current
High quality and secure supplies of drinking water	Possibly	Unlikely	Unlikely
Wahi Tau and mahinga kai are respected, understood, protected and enhanced	Highly unlikely/no	Highly unlikely/no	Possibly
Healthy lowland streams	Unlikely	Highly unlikely/n	Probably

Priority outcomes	Current	Scenario 1	Zone Committee Solutions Package
		o	
Te Waihora is a healthy ecosystem	Unlikely	Unlikely	Probably
Hill-fed waterways support aquatic life and recreation	Possibly	Possibly	Probably
Enhanced indigenous biodiversity across the Zone	Unlikely	Unlikely	Probably

Conclusion

5.58 The role of the technical information is one of informing and supporting the decision-makers in the limit setting process by making the consequences of various policy options transparent. This was done through creating a fit-for-purpose assessment framework and process. This type of technical work is subject to many uncertainties. There is no right answer. The outcomes chosen were the result of value judgements made about what package of solutions gives the greatest overall benefit. These agreed outcomes have been translated into catchment limits. There is, of course, uncertainty associated with these catchment limits. The impact of uncertainty in the modelling of catchment loads is a question of where the burden of uncertainty should lie. There is no right answer, but each action or decision has consequences across the well-beings, and the integrated nature of the technical assessments highlights these consequences.

7 Legal and Statutory Context[36]

Introduction

7.1 This part of the section 42A report provides the statutory framework for assessing Variation 1. The section also addresses those specific legal issues raised by the submissions.

Context

7.2 The significance of the Selwyn-Waihora catchment is described in detail elsewhere in this report. In short:

a. Lake Waihora and its surrounds have high cultural significance;

b. Parts of the catchment have degraded water quality, including a high trophic level index in Lake Waihora, and there is poor ecological health (as measured by invertebrate monitoring) elsewhere in the catchment; and

c. Agriculture is the mainstay of the economy in the catchment.

7.3 Variation 1 is the first change to the proposed Land and Water Regional Plan (pLWRP) anticipated by Policies 4.9 and 4.10 of the pLWRP. The Variation amends Section 11 of the pLWRP which relates to the Selwyn-Waihora catchment and parts of Section 5 and Section 9. It also makes changes to Section 9 of the pLWRP on the management of groundwater in the West Melton special zone and on stormwater flooding in the Huritini/Halswell River catchment.

7.4 Policies 4.9 and 4.10 of the pLWRP provide for the development of sub-regional sections of the pLWRP to identify and provide for the social, economic, cultural and environmental values of each catchment, having particular regard to collaboratively developed water quality and quantity outcomes and methods, and timeframes to achieve them, including through setting limits and targets. The pLWRP establishes a framework for the setting of methods and a timeframe to phase out any over-allocation.

7.5 The policies established under the pLWRP and the collaborative approach being taken to fresh water planning in Canterbury have their genesis in the CWMS which is further described in Section 3 of this report. As is described elsewhere in this report, Variation 1 was developed following a Zone Committee process which led to a range of recommendations being made by the Zone Committee to the Council in the form of the ZIP addendum (ZIP Addendum) in September 2013.

7.6 Variation 1 contains the regulatory recommendations from the ZIP Addendum. The outcomes sought by the Zone Committee will be achieved by a combination of regulatory

[36] This section has been prepared by Philip Maw

and non-regulatory mechanisms. A description of the non-regulatory actions is set out in section 5 of this report.

Statutory Framework – General Requirements

7.7 The following section of this report sets out the general requirements with respect to the preparation of regional plans, including regional rules. These requirements are set out in summary form, with specific consideration then given to those issues that warrant closer attention in separate sections below.

Contents and preparation of regional plans

7.8 The purpose of the preparation, implementation, and administration of regional plans is to assist a regional council to carry out its functions in order to achieve the purpose of the Resource Management Act 1991 (RMA).[37]

7.9 A regional council may prepare a regional plan for the whole or part of its region for any function specified in section 30(1)(c), (ca), (e), (f), (fa), (fb), (g) or (ga).[38] A plan must be prepared in accordance with Schedule 1.[39]

7.10 A regional plan must be prepared in accordance with a council's functions under section 30, Part 2 and its obligation to prepare an evaluation report under section 32 and to have particular regard to the evaluation report and any regulations.[40]

7.11 When preparing a regional plan, a regional council:

a. Is to have regard to management plans and strategies prepared under other Acts to the extent to which their content has a bearing on resource management issues of the region.[41]
b. Is to have regard to the extent to which the plan needs to be consistent with regional policy statements, plan, proposed regional policy statement and proposed plans of adjacent regional councils.[42]
c. Is to take into account any relevant planning document recognised by an iwi authority, if it is lodged with the council, to the extent that its contents has a bearing on the resource management issues of the region.[43]
d. Must not have regard to trade competition.[44]

7.12 Section 67 directs the contents of regional plans:

[37] Section 63(1).
[38] Section 65(1).
[39] Section 65(3).
[40] Section 66.
[41] Section 66(2)(c)(i).
[42] Section 66(2)(d).
[43] Section 66(2A).
[44] Section 66(3).

a. A regional plan must state the objectives for the region, the policies to implement the objectives and the rules (if any) to implement the policies.[45]
b. A regional plan may also state the matter provided for in section 67(2).
c. A regional plan must give effect to any national policy statement, any New Zealand coastal policy statement and any regional policy statement.[46]
d. A regional plan is not to be inconsistent with a water conservation order, or any other regional plan for the region.[47]

7.13 If a regional council has allocated a natural resource under section 30(1)(fa) or (fb) and (4) is must record how it has done so.[48]

Regional rules

Sections 13 to 15

7.14 Section 13 of the RMA contains restrictions on certain uses of beds of lakes and rivers (but does not apply to any use of land in the coastal marine area) unless expressly allowed by a regional rule or a resource consent.

7.15 Section 14 contains similar restrictions in relation to the taking, use and damming of water such that no person may take, use, dam, or divert water unless the taking, using, damming, or diverting is expressly allowed by a national environmental standard, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent, or is otherwise allowed in accordance with section 14(3).[49]

7.16 Section 15 restricts activities relating to the discharge of contaminants into water, onto or into land in circumstances which may result in the contaminant entering water, or into air (including those from industrial and trade premises).

Section 68

7.17 A regional council may include rules in a regional plan, for the purposes of carrying out its functions under the RMA (other than those described under section 30(1)(a) and (b)) and achieving the objectives and policies of the plan.[50]

7.18 In making a rule, the Council must have regard to the actual and potential effect of activities on the environment.[51]

[45] Section 67(1).
[46] Section 67(3).
[47] Section 67(4)
[48] Section 67(5)
[49] Section 14(2) and (3).
[50] Section 68.
[51] section 68(3).

7.19 A rule may:[52]

a. Apply throughout the region or part of the region;
b. Make different provision for different parts of the region, or different classes of effects arising from an activity;
c. Apply all the time, or for stated periods or seasons;
d. Be specific or general in its application; and
e. Require a resource consent to be obtained for an activity causing, or likely to cause, adverse effects not covered by the plan.

7.20 Where a regional plan includes a rule relating to maximum or minimum levels or flows or rates of use of water, or minimum standards of water quality, or ranges of temperature or pressure of geothermal water, the plan may state:

a. Whether the rule shall affect, under section 130, the exercise of existing resource consents for activities which contravene the rule; and
b. That the holders of resource consents may comply with the terms of the rule (or rules) in stages or over specified periods.[53]

Section 69

7.21 Section 69 applies to rules relating to water quality, including circumstances in which standards are inadequate and setting standards that are more stringent or specific.

7.22 A regional council is able to manage water quality for purposes described in the classes specified in Schedule 3, by reference to standards contained in that Schedule, or more appropriate standards.[54] Section 69(3) also sets circumstances in which a regional council is not to set standards that may result in a reduction of the quality of water unless it is consistent with the purpose of the RMA.

7.23 The pLWRP, and Variation 1, do not use the Schedule 3 approach.

Section 70

7.24 Section 70(1) specifies certain standards relating to permitted activity rules for discharges. Before a regional council includes in a regional plan, a rule that allows as a permitted activity:

a. a discharge of a contaminant or water into water; or
b. a discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; -

The regional council shall be satisfied that none of the following effects is likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants): the production of conspicuous oil or grease films, scums or foams, or floatable or suspended material; any conspicuous change in the colour or visual clarity; any emission of

[52] Section 68(5).
[53] Section 68(7).
[54] Section 69.

objectionable odour; the rendering of fresh water unsuitable for consumption by farm animals; or any significant adverse effects on aquatic life.

7.25 Before the regional council includes a rule in a regional plan requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant, the regional council must be satisfied that having regard to:

a. The nature of the discharge and the receiving environment; and
b. Other alternatives, including a rule requiring the observance of minimum standards of quality of the environment,

that the inclusion of the rule in the plan is the most efficient and effective means of preventing or minimising those adverse effects on the environment.[55]

National Environmental Standards

7.26 Section 43B(3) of the RMA provides that a rule may not be more lenient than a national environmental standard (NES).

Part 2

7.27 The following part of the report considers specific matters relating to the application of the statutory framework.

7.28 Other statutes having a bearing on the preparation of Variation 1 are also addressed below.

7.29 As set out above, a regional plan must be prepared in accordance with a council's functions under section 30, Part 2 and its obligation to prepare an evaluation report under section 32 and to have particular regard to the evaluation report and any regulations.[56]

General requirements

7.30 Part 2 of the RMA sets out the purpose and principles of general application in giving effect to the Act. As is set out below, the application of Part 2 when giving effect to higher order directions has recently been the subject of the Supreme Court's decision in *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited.*[57]

7.31 For the reasons described more fully below, it is considered that the previously accepted "overall judgment" approach and Part 2 still has validity in considering how a Council promoted variation to a regional plan should give effect to the New Zealand Coastal Policy Statement 2010(NZPCS), national policy statement (NPS) and Canterbury Regional Policy

[55] Section 70(2)
[56] Section 66.
[57] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38.

Statement 2013 (RPS) provisions and also the CRC's duties under section 32. Accordingly, the provisions of Part 2 are set out as follows.

7.32 The purpose of the RMA in section 5(1) is to "promote the sustainable management of natural and physical resources."

7.33 Section 5(2) defines sustainable management as:

> *"In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*
>
> *(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment."*

7.34 Natural and physical resources includes "land, water, soil, minerals, energy, all forms of plants and animals (whether native to New Zealand or introduced), and all structures".

7.35 Section 6 of the RMA identifies matters of national importance, and directs all persons exercising functions and powers under the RMA to recognise and provide for them:

a. Section 6(a) requires the preservation of the natural character of wetlands, lakes and rivers and their margins, and the protection of them from inappropriate use and development;
b. Section 6(b) directs the protection of outstanding natural features from inappropriate use and development;
c. Section 6(c) requires the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;
d. Section 6(d) requires the maintenance and enhancement of public access to and along lakes and rivers; and
e. Section 6(e) requires recognition of the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.

7.36 Section 7 requires particular regard to be given to the following other matters:

- kaitiakitanga:
- (aa) the ethic of stewardship:
- the efficient use and development of natural and physical resources:
- (ba) the efficiency of the end use of energy:
- the maintenance and enhancement of amenity values:
- intrinsic values of ecosystems:
- [Repealed]
- maintenance and enhancement of the quality of the environment:

- any finite characteristics of natural and physical resources:
- the protection of the habitat of trout and salmon:
- the effects of climate change:
- the benefits to be derived from the use and development of renewable energy.

7.37 Section 8 requires, in achieving the purpose of the RMA, all persons exercising functions and powers under it, in relation to managing the use, development and protection of natural and physical resources, to take into account the principles of the Treaty of Waitangi.

The Supreme Court decision in *King Salmon*

7.38 The role of Part 2 in the assessment of planning documents (particularly the requirement to give effect to higher order planning documents under section 67) has been the subject of the recent Supreme Court decision in *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited.*[58]

7.39 The Supreme Court's decision has cast doubt on the previously accepted approach of applying an "overall broad judgment" under Part 2 when assessing a planning document and whether it gives effect to higher order documents and also when assessing objectives and policies that compete or "pull in different directions".[59]

7.40 The Court found that there was no basis to refer back to section 5 or to undertake an overall judgement when assessing whether specific, directive, policies in the NZCPS had been given effect to by the provisions of a proposed plan change.[60] In particular, the Supreme Court found by majority that:

a. The requirement for the regional plan to "give effect to" the NZCPS was a strong direction;[61]

b. There was no basis to refer back to section 5 or an overall judgment when addressing whether the NZCPS has been given effect to as it is the "mechanism by which Part 2 is given effect to in relation to the coastal environment".[62]

C The use of the word "avoid" in policies 13 and 15 of the NZCPS, has its ordinary meaning of "not allow" or "prevent the occurrence of", and while a policy in the NZCPS "cannot be a 'rule' within the special definition in the RMA, it may nevertheless have the effect of what in ordinary speech would be a rule."[63]

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[58] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38.
[59] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [36].
[60] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [152].
[61] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [77].
[62] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [83].
[63] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [96].

7.41 In the particular case, which involved a site specific private plan change, the Court found that because of the Board of Inquiry did not give effect to policies 13 and 15 in allowing the plan change it had failed to "give effect to" the NZCPS as required under the RMA, and the plan change should not have been granted.

7.42 In the case of Variation 1, as described more fully below, the Council considers that the relevant higher order statutory directions have been given effect to as required applying the approach in *King Salmon*. Most relevant are the directions within the National Policy Statement for Freshwater Management 2011.[64]

7.43 The Environment Court has recently considered *King Salmon* in the context of a district plan change, stating:[65]

> *"[18] We adopt the tests set out in the Monk decision with one qualification as a result of the Supreme Court's decision in Environmental Defence Society Inc v The New Zealand King Salmon Co Ltd. Because this is a plan change it now seems that resort should be had to Part 2 of the Act only if there is a problem with any of the statutory documents we have to consider. As the Supreme Court stated in that decision (about the NZCPS, rather than a district plan):*
>
> *... it is difficult to see that resort to pt 2 is either necessary or helpful in order to interpret the policies, or the NZCPS more generally, absent any allegation of invalidity, incomplete coverage or uncertainty of meaning. The notion that decision-makers are entitled to decline to implement aspects of the NZCPS if they consider that appropriate in the circumstances does not fit readily into the hierarchical scheme of the RMA."*

7.44 The Council agrees that resort should not be had to Part 2 in interpreting objectives and policies in higher order directions unless they fall within one of the categories recognised by the Supreme Court. The Supreme Court was quite clear that there will still be situations where it is necessary to "go back to" Part 2, including:

a. if the policies in question do not "cover the field and a decision-maker will have to consider whether Part 2 provides assistance in dealing with the matter(s) not covered"; or
b. where there is any uncertainty as to the meaning of particular policies (of the NZCPS).[66]

7.45 However, the Council considers that the decision in *King Salmon* did not "do away" with Part 2 considerations being relevant to the overall assessment of a variation or plan change in reaching a recommendation on Variation 1, bearing in mind the statutory considerations set

[64] The National Policy Statement for Freshwater Management 2014 comes into force on 1 August 2014 and the National Policy Statement for Freshwater Management 2011 will be revoked from that date. The applicability of the NPSFM 2014 will be addressed at the hearing of Variation 1.
[65] *Cook Adam Trustees Limited & R Monk v Queenstown Lakes District Council,* [2014] NZEnvC 117
[66] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [88] and [90].

out in sections 32, 66, 68 and 67. Rather, the implication of the Supreme Court decision is that in assessing Variation 1, an overall judgement approach cannot be relied on to justify a departure from directive policies, particularly in the NZCPS (or by analogy from setting limits and targets as required under the NPSFM). The following matters are relevant in reaching this position:

a. The case before the Supreme Court concerned specific policies in the NZCPS in relation to a site specific private plan change request. This is an entirely different context to the assessment of a catchment wide variation that must "give effect" to multiple provisions in the NPSFM, the NZCPS, other national policy statements and the RPS.

b. The purpose of a NZCPS in section 65 of the RMA requires that it state policies" *in order to achieve the purpose of this Act*" in relation to the coastal environment of New Zealand.

c. This can be contrasted to the purpose of a national policy statement under section 45 to state objectives and policies for matters of national significance that are "*relevant to achieving the purpose of this Act.*"

d. This distinction is important as it confirms that national policy statements are not ends in themselves, but rather that they contain relevant matters to be had regard to (along with other Part 2 matters).

e. This is reflected in the NPSFM 2011 itself:

    i. The preamble states that "*The national policy statement is a first step to improve freshwater management at a national level.*"

    ii. The objectives and policies recognise that *sustainable management* must be referred to. For example, Objective A1 refers to safeguarding the life-supporting capacity, ecosystem processes and indigenous species in *sustainably managing* the use and development of land and of discharges of contaminants.

f. As discussed further below, section 32 of the Act, requires the objectives of a plan to be evaluated as to whether they are the most appropriate way to achieve the purpose of the Act. Part 2 is an implicit part of the section 32 analysis.

7.46 In terms of whether the NPSFM 2011 "covers the field", unlike the NZCPS (which includes a range of enabling policies, for example Policy 6) the NPSFM is not concerned with enabling activities that require water. This is left to other policy statements (notably the National Policy Statement for Renewable Electricity Generation 2010) or the overall judgment. In this case, the NPSFM quite clearly does not "cover the field" and the decision maker will have to consider Part 2.

7.47 It is also relevant that in the case of Variation 1, and for any catchment-wide regional plan, (as opposed to a site specific private plan change application) the Council is required to give effect to NZCPS, NPS and RPS provisions across a wide geographical spectrum. These provisions sometimes compete or pull in different directions depending on the geographical location and cannot be reconciled to ensure strict compliance with all statutory directions in all locations within the catchment.

7.48 For example, the RPS directs the maintenance and enhancement of natural and physical resources contributing to Canterbury's overall rural productive economy in areas which are valued for existing or foreseeable future primary production by ensuring that rural land use intensification does not contribute to significant cumulative adverse effects on water quality and quantity (Policy 5.3.12). The explanation to the policy confirms that "The rural productive base of Canterbury is essential to the economic, cultural and social well-being of its people and communities. Enabling the use of natural and physical resources to maintain the rural productive base is a foreseeable need of future generations."

7.49 The RPS also contains a range of objectives and policies relating to water quality. For example, it directs that changes in land use are controlled to ensure water quality standards are maintained or improved (Policy 7.3.7(2)) and that where the effects on freshwater bodies, singularly or cumulatively, are unknown or uncertain, take a precautionary approach to the intensification of land use or discharge of contaminants (Policy 7.3.12).

7.50 Overall, the Council considers that it has complied with the directive nature of the relevant higher order policies, but that a Part 2 judgment must still be applied in assessing the provisions in Variation 1 against the relevant statutory tests, including section 32.

Functions

7.51 The Council's functions under section 30 as they relate to Variation 1 are:

a. Establishing, implementing and reviewing objectives, policies and methods to achieve integrated management of the natural and physical resources of the region (section 30(1)(a)).

b. Preparing objectives and policies in relation to any actual or potential effects of the use, development or protection of land which are of regional significance (section 30(1)(b)).

c. The control of the use of land for the purpose of soil conservation; the maintenance and enhancement of the quality of water in water bodies; the maintenance and enhancement of the quantity of water in water bodies; the maintenance and enhancement of ecosystems in water bodies; and the avoidance or mitigation of natural hazards (section 30(1)(c)).

d. The control of the taking, use, damming and diversion of water, and the control of the quantity, level, and flow of water in any water body, including -

    i. the setting of any maximum or minimum levels or flows of water (section 30(1)(e)(i)); and

    ii. the control of the range, or rate of change, of levels or flows of water (section 30(1)(e)(ii)).

e. The control of discharges of contaminants into or onto land, air, or water and discharges of water into water (section 30(1)(f)).

f. If appropriate, the establishment of rules in a regional plan to allocate:

    i. the taking or use of water (other than open coastal water) (section 30(1)(fa)(i)); and

ii. the capacity of water to assimilate a discharge of a contaminant (section 30(1)(fa)(iv)).

g. The establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity (section 30(1)(ga)).

7.52 Variation 1 adopts the same approach as the pLWRP by using land use rules (under section 9) to control the cumulative effects of land use on water quality.

7.53 This approach is supported by section 30(1)(c)(ii) which expressly enables a regional council to control the use of land for the purpose of the maintenance and enhancement of the quality of water in a water body. This approach has been used in other catchments in New Zealand and it is also supported by Objective A1 of the NPSFM.

Section 32

7.54 Section 32 was replaced by the Resource Management Amendment Act 2013. The new version of section 32 came into force on 2 December 2013 and since the Variation was not notified until February 2014, the new version of section 32 applies.

7.55 The objectives in the pLWRP are unaltered by Variation 1. Accordingly, the Variation must be assessed in the following terms. The evaluation must:

a. Examine whether the provisions (the policies, rules or other methods to implement the objectives) are the most appropriate way to achieve the objectives by:[67]
   i. identifying other reasonably practicable options for achieving the objectives;
   ii. assessing the efficiency and effectiveness of the provisions in achieving the objectives *(the efficiency and effectiveness assessment)*; and
   ii. summarising the reasons for deciding on the provisions;

b. Contain a level of detail that corresponds to the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of Variation 1.[68]

7.56 The *efficiency and effectiveness assessment* must:[69]

a. Identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including opportunities for economic growth (that are anticipated to be provided or reduced); and employment (that are anticipated to be provided or reduced);

b. If practicable, quantify the benefits and costs; and

c. Assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

[67] Section 32(1)(b)
[68] Section 32(1)(c).
[69] Section 32(2).

7.57 Under section 32(3) where the proposal amends an existing plan (as is the case here) the examination of whether the provisions in Variation 1 are the most appropriate way to achieve the objectives must relate to:

a. The provisions and objectives (being the purpose of the proposal) of Variation 1 and
b. The objectives of the pLWRP to the extent that those objectives are relevant to the objectives of Variation 1 and would remain if Variation 1 were to take effect.[70]

7.58 Section 32(6) defines objectives, proposal and provisions as follows:

> "***objectives*** *means-*
> *(a) for a proposal that contains or states objectives, those objectives;*
> *(b) for all other proposals, the purpose of the proposal*
>
> ***Proposal*** *means a proposed standard, statement, regulation, plan or change for which an evaluation report must be prepared under this Act*
>
> ***Provisions*** *means-*
> *(a) for a proposed plan or change, the policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change;*
> *(b) for all other proposals, the policies or provisions of the proposal that implement, or give effect to, the objectives of the proposal*"

7.59 Whilst Variation 1 does not itself contain objectives, the appropriateness of the policies and rules to be introduced by Variation have been assessed against achieving the objectives of the pLWRP as one of the purposes of Variation 1 has been to implement the pLWRP objectives in the Selwyn Waihora catchment.

7.60 Under Schedule 1 of the RMA, particular regard must be had to the section 32 report when the decision is made as to whether or not to notify Variation 1.

7.61 The section 32 report for Variation 1 was made available at the time of notification.

7.62 Some submitters have claimed that the section 32 report is inadequate or wrong. Section 32A provides that a challenge to an objective, policy, rule or other method on the grounds that the section 32 report has not been prepared or regarded, or the requirements of section 32 have not been complied with, may only be made in a submission (rather than, for example, judicial review proceedings). Section 32A(2) makes it clear that in considering Variation 1 the Hearing Commissioners may have regard to the matters stated in section 32 and as set out below in reaching a decision on Variation a further evaluation will be required.

[70] Section 32(3).

Section 32AA

7.63 Section 32AA was inserted into the RMA by the Resource Management Amendment Act 2013. It introduces an additional requirement for undertaking and publishing further evaluations for any changes that have been made to, or are proposed for, Variation 1 since the evaluation report for Variation 1 was completed under section 32.

7.64 Under section 32AA the same evaluation of the changes must be undertaken in accordance with sections 32(1) to (4) at a level of detail that corresponds to the scale and significance of the changes.

7.65 It also must either:

a. be published in an evaluation report that is made available at the same time the decision on Variation 1 is made; or
b. be referred to in the decision-making record in sufficient detail to demonstrate that the further evaluation was undertaken.

7.66 It is anticipated that any changes that Council officers recommend be made to Variation 1 (in the Council's reply) will be accompanied by a further section 32 evaluation of those changes for the purposes of section 32AA.

Giving Effect to the NZCPS, National Policy Statements and the RPS

7.67 Variation 1 is required to give effect to the New Zealand Coastal Policy Statement 2010 along with the following national policy statements:

a. National Policy Statement for Freshwater Management 2011 ("NPSFM 2011");[71]
b. National Policy Statement on Electricity Transmission 2011 ("NPSET");
c. National Policy Statement for Renewable Electricity Generation 2011 ("NPSREG")

7.68 The Council is also required to give effect to the RPS.

7.69 The phrase "give effect to" is a strong direction and requires positive implementation of the superior instrument.[72]

[71] See below regarding the National Policy Statement for Freshwater Management 2014.
[72] *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38 at [80]; *Clevedon Cares Inc v Manukau City Council* [2010] NZEnvC 211.

NZCPS

7.70 The NZCPS deals with matters relating to both the coastal marine area and also the coastal environment. It recognises that activities on land can have impacts on coastal water quality as a consequence of point and non-point sources of contamination.

7.71 Parts of the Selwyn Te Waihora catchment are within the coastal environment and accordingly Variation 1 must give effect to the NZCPS.

7.72 In light of *King Salmon* it is necessary to consider the objectives and policies in the NZCPS.

7.73 The following objectives are the most relevant to the development of Variation 1:

> ***Objective 1*** *- To safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by:*
>
> - *maintaining or enhancing natural biological and physical processes in the coastal environment and recognising their dynamic, complex and interdependent nature;*
> - *• protecting representative or significant natural ecosystems and sites of biological importance and maintaining the diversity of New Zealand's indigenous coastal flora and fauna; and*
> - *• maintaining coastal water quality, and enhancing it where it has deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity.*
>
> ***Objective 6 -*** *To enable people and communities to provide for their social, economic, and cultural wellbeing and their health and safety, through subdivision, use, and development, recognising that:*
>
> - *• the protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits;*
> - *• some uses and developments which depend upon the use of natural and physical resources in the coastal environment are important to the social, economic and cultural wellbeing of people and communities;*
> - *• functionally some uses and developments can only be located on the coast or in the coastal marine area;*
> - *• the coastal environment contains renewable energy resources of significant value;*
> - *• the protection of habitats of living marine resources contributes to the social, economic and cultural wellbeing of people and communities;*
> - *• the potential to protect, use, and develop natural and physical resources in the coastal marine area should not be compromised by activities on land;*

- *• the proportion of the coastal marine area under any formal protection is small and therefore management under the Act is an important means by which the natural resources of the coastal marine area can be protected; and*
- *• historic heritage in the coastal environment is extensive but not fully known, and vulnerable to loss or damage from inappropriate subdivision, use, and development.*

7.74 Objective 1 requires water quality to be maintained and enhanced. This is also consistent with the requirement in section 7(f) the maintenance and enhancement of the quality of the environment. It is also consistent with the direction in the NPSFM which is discussed further below.

7.75 Objective 6 of the NZCPS is important insofar that parts of the catchment are in the coastal environment, as it refers to some of the enabling aspects of subdivision, use and development occurring in the coastal environment.

7.76 The following policies are the most relevant to Variation 1.

Policy 4: Integration *- Provide for the integrated management of natural and physical resources in the coastal environment, and activities that affect the coastal environment. This requires:*

a. co-ordinated management or control of activities within the coastal environment, and which could cross administrative boundaries, particularly:
i. the local authority boundary between the coastal marine area and land;
ii. local authority boundaries within the coastal environment, both within the coastal marine area and on land; and
iii. where hapū or iwi boundaries or rohe cross local authority boundaries;

b. working collaboratively with other bodies and agencies with responsibilities and functions relevant to resource management, such as where land or waters are held or managed for conservation purposes; and

c. particular consideration of situations where:
i. subdivision, use, or development and its effects above or below the line of mean high water springs will require, or is likely to result in, associated use or development that crosses the line of mean high water springs; or
ii. public use and enjoyment of public space in the coastal environment is affected, or is likely to be affected; or
iii. development or land management practices may be affected by physical changes to the coastal environment or potential inundation from coastal hazards, including as a result of climate change; or
iv. land use activities affect, or are likely to affect, water quality in the coastal environment and marine ecosystems through increasing sedimentation; or
v. significant adverse cumulative effects are occurring, or can be anticipated.

Policy 7: Strategic planning

1. In preparing regional policy statements, and plans:

a. consider where, how and when to provide for future residential, rural residential, settlement, urban development and other activities in the coastal environment at a regional and district level; and

b. identify areas of the coastal environment where particular activities and forms of subdivision, use, and development:

i. are inappropriate; and

ii. may be inappropriate without the consideration of effects through a resource consent application, notice of requirement for designation or Schedule 1 of the Resource Management Act process; and provide protection from inappropriate subdivision, use, and development in these areas through objectives, policies and rules.

2. Identify in regional policy statements, and plans, coastal processes, resources or values that are under threat or at significant risk from adverse cumulative effects. Include provisions in plans to manage these effects. Where practicable, in plans, set thresholds (including zones, standards or targets), or specify acceptable limits to change, to assist in determining when activities causing adverse cumulative effects are to be avoided.

Policy 21: Enhancement of water quality *- Where the quality of water in the coastal environment has deteriorated so that it is having a significant adverse effect on ecosystems, natural habitats, or water-based recreational activities, or is restricting existing uses, such as aquaculture, shellfish gathering, and cultural activities, give priority to improving that quality by:*

a. identifying such areas of coastal water and water bodies and including them in plans;

b. including provisions in plans to address improving water quality in the areas identified above;

c. where practicable, restoring water quality to at least a state that can support such activities and ecosystems and natural habitats;

d. requiring that stock are excluded from the coastal marine area, adjoining intertidal areas and other water bodies and riparian margins in the coastal environment, within a prescribed time frame; and

e. engaging with tangata whenua to identify areas of coastal waters where they have particular interest, for example in cultural sites, wāhi tapu, other taonga, and values such as mauri, and remedying, or, where remediation is not practicable, mitigating adverse effects on these areas and values.

Policy 22: Sedimentation

1. Assess and monitor sedimentation levels and impacts on the coastal environment.

2. Require that subdivision, use, or development will not result in a significant increase in sedimentation in the coastal marine area, or other coastal water.

3. *Control the impacts of vegetation removal on sedimentation including the impacts of harvesting plantation forestry.*
4. *Reduce sediment loadings in runoff and in stormwater systems through controls on land use activities.*

Policy 23: Discharge of contaminants

1. *In managing discharges to water in the coastal environment, have particular regard to:*
   a. *the sensitivity of the receiving environment;*
   b. *the nature of the contaminants to be discharged, the particular concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration of contaminants is exceeded; and*
   c. *the capacity of the receiving environment to assimilate the contaminants; and:*
   d. *avoid significant adverse effects on ecosystems and habitats after reasonable mixing;*
   e. *use the smallest mixing zone necessary to achieve the required water quality in the receiving environment; and*
   f. *minimise adverse effects on the life-supporting capacity of water within a mixing zone.*
2. *In managing discharge of human sewage, do not allow:*
   a. *discharge of human sewage directly to water in the coastal environment without treatment; and*
   b. *the discharge of treated human sewage to water in the coastal environment, unless:*
      i. *there has been adequate consideration of alternative methods, sites and routes for undertaking the discharge; and*
      ii. *informed by an understanding of tangata whenua values and the effects on them.*
3. *Objectives, policies and rules in plans which provide for the discharge of treated human sewage into waters of the coastal environment must have been subject to early and meaningful consultation with tangata whenua.*
4. *In managing discharges of stormwater take steps to avoid adverse effects of stormwater discharge to water in the coastal environment, on a catchment by catchment basis, by:*
   a. *avoiding where practicable and otherwise remedying cross contamination of sewage and stormwater systems;*
   b. *reducing contaminant and sediment loadings in stormwater at source, through contaminant treatment and by controls on land use activities;*
   c. *promoting integrated management of catchments and stormwater networks; and*
   d. *promoting design options that reduce flows to stormwater reticulation systems at source.*

7.77 Policy 7 is directly relevant to the preparation of Variation 1. While the Council has not adopted the approach of distinguishing between use of land within the coastal environment and elsewhere in the catchment, the polices and rules in Variation 1 manage the effects of use of land in the coastal environment on water quality. In this regard the Council has adopted an approach of integrated management of effects on water quality throughout the Selwyn Te Waihora catchment.

7.78 Policy 21 is also relevant to Variation 1 and requires that where the quality of water in the coastal environment has deteriorated so that it is having a significant adverse effect on ecosystems, natural habitats, or water based recreational activities give priority to improving that quality, including by requiring that stock are excluded from water bodies and riparian margins in the coastal environment. Variation 1 goes further than the pLWRP provisions which already require stock exclusion, by requiring stock exclusion from artificial water courses.

7.79 Variation 1 gives effect to the other policy directions regarding sedimentation and the discharge of contaminants and the other directions in the NZCPS.

7.80 In respect of Policies 13 and 15 of the NZCPS, which formed much of the discussion in *King Salmon,* Variation 1 is not enabling development or activities over and above the status quo. Accordingly, Variation 1 is considered to be preserving the natural character of the coastal environment and protecting the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use and development.

NPSFM 2011

7.81 Variation 1 was prepared on the basis that it was required to give effect to the NPSFM 2011 and the following section of this report was also prepared on that basis. On 4 July 2014, after submissions and further submissions on Variation 1 closed and after this report was substantially prepared, the National Policy Statement for Freshwater Management 2014 ("NPSFM 2014") was *Gazetted.* The NPSFM 2014 comes into force on 1 August 2014 and it will replace the NPSFM 2011. The NPSFM 2011 will be revoked from that date.

7.82 While the objectives in the NPSFM 2014 are largely the same as the objectives in the NPSFM 2011 s some of the policies in the NPSFM 2014 are different to the NPSFM 2011 policies. Due to the timing of the release of the NPSFM 2014 and the date of this report the implications of the changes in the NPSFM 2014 policies will be addressed by the Council at the hearing of Variation 1.

7.83 The NPSFM 2011 is particularly relevant to Variation 1. The problems associated with managing water quality and quantity within the Selwyn-Waihora catchment is complex and multi-layered. The first step in addressing problems and in giving effect to the NPSFM 2011

was through the pLWRP. The second step is Variation 1, but it will not be the last. One of the main reasons that Canterbury Regional Council has gone down the route of the collaborative Zone Committee process is to enable the setting of freshwater objectives and limits (as required by the NPSFM 2011) to be informed by the community's views.

7.84 One of the main issues raised in submissions is whether or not Variation 1 gives effect to the NPSFM 2011. For example, some submitters have contended that less nitrogen leaching should be allowed under Variation 1, whilst others contend that more intensive farming should be provided for.

7.85 As provided for in section 67(3) of the RMA, Variation 1 must give effect to any national policy statement. As set above, the requirement to "give effect to" is a strong one and requires positive implementation of the superior instrument. Variation 1 must give effect to both the provisions in the NPSFM 2011 relating to water quality, but also the water quantity provisions.

7.86 The provisions in the Variation 1 addressing water quality appear to the more contentious than the water quantity provisions. The provisions of the NPSFM 2011 that apply to water quality issues are Objective A1, Objective A2, Policy A1, Policy A2, Policy B6, Objective C1, Policy C1, Objective D1, Policy D1.

7.87 Policy E1 provides for time-staged implementation of the NPSFM 2011. In relation to Policy A2, the Council decided by resolution dated 7 November 2012 to implement Policy A2 (and Policy B6 in relation to water quantity) in defined, time-limited stages. Variation 1 is the first sub-regional chapter in the pLWRP giving effect to the Council's time-staged implementation of Policy A2.

Objectives A1 and A2, Policies A1 and A2, Objective C1 and Policy C1 and Objective D1 and Policy D1 – water quality

7.88 Objectives A1 and A2, Policies A1 and A2, Objective C1 and Policy C1 and Objective D1 and Policy D1 of the NPSFM 2011 are set out as follows:

> ***Objective A1***
> *To safeguard the life-supporting capacity, ecosystem processes and indigenous specifies including their associated ecosystems of fresh water, <u>in sustainably managing</u> the use and development of land, and of discharges of contaminants.*
>
> ***Objective A2***
> *The <u>overall quality</u> of fresh water within a region is maintained or improved while:*
> *a) protecting the quality of outstanding freshwater bodies*
> *b) protecting the significant values of wetlands and*
> *c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.*

Policy A1

By every regional council making or changing regional plans to the extent needed to ensure the plans:

a) establish freshwater objectives and set freshwater quality limits for all bodies of fresh water in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:

i) the reasonably foreseeable impacts of climate change

ii) the connection between water bodies

b) establish methods (including rules) to avoid over-allocation.

Policy A2

Where water bodies do not meet the freshwater objectives made pursuant to Policy A1, every regional council is to specify targets and implement methods (either or both regulatory and non-regulatory) to assist the improvement of water quality in the water bodies, to meet those targets, and within a defined timeframe.

(Our emphasis)

7.89 A freshwater objective is defined in the NPSFM 2011 as:

***Freshwater objective** describes the intended environmental outcome(s).*

7.90 A freshwater quality limit is defined in the NPSFM 2011 as meaning the following:

***Limit** is the maximum amount of resource use available, which allows a freshwater objective to be met.*

(Our emphasis)

7.91 Over-allocation is defined in the NPSFM 2011 as follows:

***Over-allocation** is the situation where the resource:*

a) has been allocated to users beyond a limit or

b) is being used to a point where a freshwater objective is no longer being met.

This applies to both water quantity and quality.

7.92 Objective C1 and Policy C1 state the following:

Objective C1

To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment.

Policy C1
By every regional council managing fresh water and land use and development in catchments in an integrated and sustainable way, so as to avoid, remedy or mitigate adverse effects, including cumulative effects.

7.93 Objective D1 and Policy D1 provide:

Objective D1
To provide for the involvement of iwi and hapū, and to ensure that tangata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.

Policy D1
Local authorities shall take reasonable steps to:

a) involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region
b) work with iwi and hapū to identify tangata whenua values and interests in fresh water and freshwater ecosystems in the region and
c) reflect tangata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region.

Giving effect to the NPSFM 2011 – water quality

7.94 Bearing in mind the Supreme Court direction in King Salmon, it is considered that in order to give effect to the NPSFM 2011 that the pLWRP and Variation 1 must under Policy A1 establish freshwater objectives (i.e. the intended environmental outcomes) for the catchment; and set freshwater quality limits in order to give effect to all the objectives in the NPSFM 2011.

7.95 To the extent that freshwater bodies to not meet the freshwater objectives made under Policy A1 then the Council is to specify targets and methods (both regulatory and non-regulatory) to assist in the improvement of water quality to meet the targets and within a defined timeframe.

7.96 Variation 1 has given effect to these directions:

a. The fresh water outcomes for the catchment are set out in Tables 11(a), and 11(b) for Selwyn Waihora catchment rivers and lakes under heading 11.6. The outcomes include ecological health indicators, macrophyte indicators, periphyton indicators, siltation indications, microbiological indicators, eutrophication indicators, and visual quality indicators and cultural indicators.

b. Some of the objectives in the pLWRP, which are not amended by Variation 1, are also narrative region wide outcomes.
c. The water quality limits are contained in tables 11(i), 11(j), 11(k), 11(l) and 11(m).
d. In respect of nitrogen losses from farming this is expressed as a target to be met by no later than 2037 as nitrogen losses currently exceed this amount.

Key issues in relation to giving effect to the NPSFM 2011 in Variation 1 – water quality

7.97 The Council considers that the submissions raise the following key issues with respect to giving effect to the NPSFM 2011:
a. Objective A2 and the requirement to maintain or improve the "overall" water quality;
b. The role of integrated management and Objective C1;
c. The use of non-regulatory methods.

7.98 Relevantly, Policy A1 refers to all the objectives in the NPSFM 2011, not just Objectives A1 and A2. Accordingly, in setting freshwater objectives and limits, the Council must consider all of the objectives in the NPSFM 2011 in reaching a decision about the freshwater objectives and limits/targets to impose.

7.99 Therefore, while Objective A2 refers to improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated, this direction does not need to translate directly into a limit requiring immediate improvement of freshwater quality. Objective A2 refers to overall quality of fresh water within a region, so it may be that in some particular places in the region that water quality does not improve. However, overall the water quality in the region (or catchment) must be maintained or improved over time.

7.100 It is also relevant that Objective A1 (which must also be given effect to during the limit setting process under Policy A1) refers to "sustainably managing the use and development of land". As explained above, and despite the Supreme Court's decision in King Salmon, it is considered that the sustainable management of the use and development of land is a clearly relevant factor in setting limits and giving effect to Policy A1. In the case of Variation 1, this will include the economic, cultural and social matters relevant to controlling land in the manner proposed, in addition to the environmental factors.

7.101 Objective C1 plays a particular role in Variation 1 and the "solution package" put forward by the Zone Committee (as described elsewhere in this report). This is because of the effect on water quantity and water quality arising from the Central Plains Water scheme and the water that will be brought into the catchment once the scheme is operating. While the scheme will introduce intensification of farming in some parts of the catchment (which may have an impact on nitrogen leaching) the scheme has already been consented and as such it is considered that the "over-allocation" has already occurred. Furthermore, the scheme plays an important role in reaching the outcomes sought for the catchment with respect to water quantity, by introducing additional alpine water in to the catchment and reducing reliance on groundwater takes.

7.102 The whole approach of the Zone Committee's package as contained in the ZIP Addendum and described elsewhere in this report has been one of integrated management.

7.103 In that respect, the "solution" to water quality issues in the catchment will require regulatory intervention (as proposed by Variation 1) to occur alongside a range of non-regulatory interventions. Some of these non-regulatory methods are described in section 5 of this report.

7.104 In respect of giving effect to the NPSFM 2011 it is relevant that Policy A2 refers to both regulatory and non-regulatory methods to assist in improving water quality over time.

Giving effect to the NPSFM 2011 – water quality

7.105 The NPSFM 2011 also contains objectives and policies relating to water quantity that must be given effect to. These are set out as follows:

> ***Objective B1***
> *To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of freshwater, in sustainably managing the taking, using, damming, or diverting of fresh water.*
>
> ***Objective B2***
> *To avoid any further over-allocation of fresh water and phase out existing over-allocation.*
>
> ***Objective B3***
> *To improve and maximise the efficient allocation and efficient use of water.*
>
> ***Policy B1***
> *By every regional council making or changing regional plans to the extent needed to ensure the plans establish freshwater objectives and set environmental flows and/or levels for all bodies of fresh water in its region (except ponds and naturally ephemeral water bodies) to give effect to the objectives in this national policy statement, having regard to at least the following:*
> *(a) the reasonably foreseeable impacts of climate change*
> *(b) the connection between water bodies.*
>
> ***Policy B2***
> *By every regional council making or changing regional plans to the extent needed to provide for the efficient allocation of fresh water to activities, within the limits set to give effect to Policy B1.*

Policy B3
By every regional council making or changing regional plans to the extent needed to ensure the plans state criteria by which applications for approval of transfers of water take permits are to be decided, including to improve and maximise the efficient allocation of water.

Policy B4
By every regional council identifying methods in regional plans to encourage the efficient use of water.

Policy B5
By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a water body that are authorised to be taken, used, dammed or diverted – does not over-allocate the water in the water body.

Policy B6
By every regional council setting a defined timeframe and methods in regional plans by which over-allocation must be phased out, including by reviewing water permits and consents to help ensure the total amount of water allocated in the water body is reduced to the level set to give effect to Policy B1.

7.106 Variation 1 has sought to give effect to these objectives and policies by the inclusion of a detailed environmental flow regime, along with groundwater and surface water allocation limits (including combined groundwater and surface water allocation regimes).

7.107 Methods to encourage the efficient use of water are included in Schedule 10 of the pLWRP. In the Selwyn Te Waihora catchment, method 1 in Schedule 10 determines seasonal irrigation demand based on eight and a half years out of ten.

7.108 The legal questions regarding transfers are addressed separately below.

Canterbury Regional Policy Statement 2013

7.109 Variation 1 is also required to give effect to the RPS.

7.110 The section 32 report describes the key aspects of the RPS with respect to freshwater in more detail.[73]

[73] Section 32 report pages 226-228

7.111 Relevantly Variation 1 also gives effect to other directions in the RPS. The RPS provisions are considered further in evaluations contained in sections 8 to 23 of this report where they are relevant to particular submissions on Variation 1 or provisions within Variation 1.

Other NPS – NPSET and NPSREG

7.112 The NPSET and NPSREG must also be given effect to by Variation 1.

7.113 The section 32 report sets out the relevant objectives and policies in both the NPSET and the NPSREG.[74]

7.114 No submissions or further submissions on Variation 1 have sought changes to better give effect to either policy statement accordingly, the relevant objectives and policies are not repeated here for the purposes of the section 42A report.

National Environmental Standards, Other Plans and WCOS

National environmental standards

7.115 Section 43B(3) of the RMA provides that a rule may not be more lenient than a national environmental standard (NES).

7.116 The only national environmental standards directly relevant to Variation 1 are the Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007 (Drinking Water NES).

7.117 Regulation 13 of the Drinking Water NES enables a local authority to make or amend rules in a regional plan that are more stringent than the requirements of the Drinking Water NES.

7.118 Regulation 10 of the Drinking Water NES prevents regional councils from including permitted activity rules in regional plans in certain circumstances, where the activities have the potential to affect a registered drinking-water supply that provides no fewer than 501 people with drinking water for not less than 60 calendar days each year.[75]

7.119 Regulation 10(1) states that a regional council must not include a rule in its regional plan to allow a permitted activity, under section 9, 13, 14 or 15 of the Act, upstream of an abstraction point where the drinking water concerned meets the health quality criteria, unless satisfied that the activity is not likely to introduce or increase the concentration of any determinants in the drinking water so that, after existing treatment –

a. it no longer meets the health quality criteria; or
b. it contains aesthetic determinants at values exceeding the guideline values.

[74] Section 32 report pages 225-226.
[75] Regulation 9 of the Drinking Water NES.

7.120 Regulation 10(2) states that a regional council must not include a rule in its regional plan to allow a permitted activity, under section 9, 13, 14 or 15 of the Act, upstream of an abstraction point where the drinking water concerned is not tested in accordance with the compliance monitoring procedures in the Drinking-water Standards for New Zealand 2005 ("Drinking-water Standard"), unless satisfied that the activity is not likely to –

a. increase the concentration of any determinants in the drinking water at the abstraction point by more than a minor amount; or

b. introduce or increase the concentration of any aesthetic determinants in the drinking water so that, after existing treatment, it contains aesthetic determinants at values exceeding the guideline values.

7.121 Regulation 10(3) states that a regional council must not include a rule in its regional plan to allow a permitted activity, under section 9, 13, 14 or 15 of the Act, upstream of an abstraction point where the drinking water concerned does not meet the health quality criteria, unless satisfied that the activity is not likely to –

a. increase, by more than a minor amount, the concentration of any determinants in the drinking water at the abstraction point that already exceed the maximum acceptable values for more than the allowable number of times as set out in the Drinking-water Standard; or

b. increase the concentration of any determinants in the drinking water at the abstraction point that do not exceed the maximum acceptable values for more than the allowable number of times as set out in the Drinking-water Standard to the extent that the drinking water after existing treatment, exceeds the maximum acceptable values for more than the allowable number of times as set out in the Drinking-water Standard; or

c. introduce or increase the concentration of any aesthetic determinants in the drinking water so that, after existing treatment, it contains aesthetic determinants at values exceeding the guideline values.

7.122 Regulation 8 also contains certain direction on granting water permits or discharge permits. These are described in more detail in the section 32 report. As set out in the section 32 report, Variation 1 has been drafted to ensure that requirements of the Drinking Water NES have been complied with.

7.123 The proposed National Environmental Standard on ecological flows and water levels has not been made operative and therefore it is not directly relevant at this time and section 43B does not apply to proposed national environmental standards.

7.124 For completeness, we record that the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 apply to the taking of water and contain certain regulations regarding measuring and taking water. The regulations do not prescribe matters in relation to the contents of regional plans (although the regulations will override the requirements of regional plans, for example in relation to the provision of information) and are not directly relevant to the preparation of Variation 1.

Other plans and planning documents recognised by iwi

7.125 When preparing Variation 1, the Council was required to take into account any relevant planning document recognised by an iwi authority[76] and to have regard to management plans or strategies prepared under other Acts to the extent that these have a bearing on resource management issues in the region.[77]

7.126 The following planning documents are recognised by Ngāi Tahu iwi and are relevant to Variation 1:

a. Mahaanui Iwi Management Plan (published February 2013), applies to those Canterbury Papatipu Rūnanga located east of the main divide and in the land area between the Hakatere/Ashburton and Hurunui Rivers, including Christchurch City and the Banks Peninsula. This iwi plan covers the takiwa of 6 of the 10 Papatipu Rūnanga located in Canterbury.

b. Te Waihora Joint Management Plan (Mahere Tukutahi o Te Waihora) 2005.

c. Te Rūnanga o Ngāi Tahu Freshwater Policy (1999) which applies to the whole of the Te Rūnanga o Ngāi Tahu rohe, an area which extends beyond Canterbury.

7.127 Each of these plans has been considered during the preparation of Variation 1, as more fully described in the section 32 report.

7.128 The Sports Fish and Game Birds Management Plans for North Canterbury and for the Central South Island under the Conservation Act 1987 is a management plan relevant to Variation 1.

Water conservation orders

7.129 Variation 1 must not be inconsistent with a water conservation order.[78]

7.130 The Lake Ellesmere (Te Waihora) Water Conservation Order 1990 (as amended in 2011) (WCO) is relevant to Variation 1.

7.131 The WCO declares that Lake Ellesmere (Te Waihora) has or contributes to the following outstanding amenity or intrinsic values that warrant protection:

a. habitat for wildlife, indigenous wetland vegetation and fish; and

b. significance in accordance with tikanga Māori in respect of Ngāi Tahu history, mahinga kai and customary fisheries.

7.132 The Lake Ellesmere (Te Waihora) WCO also provides restrictions on lake openings and closing and granting resource consents (including water permits) in certain circumstances.

[76] Section 66(2A).
[77] Section 66(2)(c)(ii).
[78] Section 67(4).

7.133 The National Water Conservation (Rakaia River) Order 1988 is also broadly relevant to Variation 1. The Rakaia River WCO declares that Rakaia River and its tributaries include an outstanding natural characteristic in the form of a braided river; and outstanding wildlife habitat above and below the Rakaia River Gorge, outstanding fisheries, outstanding recreational, angling, and jet boating features. The Rakaia River requires the retention and partial retention of natural waters in a natural state and contains a separate flow regime for the Rakaia River. Variation 1 is consistent with the Rakaia River WCO and does not set a flow regime for the Rakaia River.

7.134 Variation 1 is consistent with both the WCOs.

Other Statutes

7.135 The following section of this report considers the statutory directions contained in statutes other than the RMA.

Ngāi Tahu Claims Settlement Act 1998

7.136 The Te Rūnanga o Ngāi Tahu Act 1996 and the Ngāi Tahu Claims Settlement Act 1998 recognise Ngāi Tahu Whānui as tangata whenua for Canterbury. This is particularly relevant in applying sections 6(e), 7(a) and 8 of the RMA.

7.137 The RPS also identifies issues of importance to Ngāi Tahu and describes processes for enhancing the relationship of Ngāi Tahu and the Council (Chapters 2 and 4). Therefore, compliance with those Acts is also relevant to giving effect to the RPS.

Environment Canterbury Act – CWMS and the Zone Committee process

7.138 The Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 (ECan Act) was passed in 2010 to provide CRC with certain powers that it does not otherwise have to address issues relevant to the efficient, effective, and sustainable management of fresh water in the Canterbury region (amongst other matters). Section 63 of the Environment Canterbury Act (ECan Act) requires, in considering Variation 1, particular regard to be given to the vision and principles of the CWMS, which are set out in Part 1 of Schedule 1 of the ECan Act.

7.139 A description of the history of the CWMS is contained in section 3 of this report. This description provides context to the following analysis of the vision and principles of the CWMS and how the CWMS as a whole is relevant to Variation 1 and any decision on it.

7.140 The vision of the CWMS is:

> *"To enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from our water resources within an environmentally sustainable framework."*

7.141 The primary principles of the CWMS are sustainable management, a regional approach, and kaitiakitanga. The supporting principles are natural character, indigenous biodiversity, access, quality drinking water, recreational and amenity opportunities, and community and commercial use.

7.142 While section 63 of the ECan Act requires particular regard to be had to the vision and principles of the CWMS, the vision and principles of the CWMS are also being given effect to in Canterbury through the wider auspices of the CWMS as a whole. The CWMS ushered in a collaborative and integrated management approach to freshwater management, seeking to maximise opportunities for the region's environment, economy and community. The CWMS identified that a shift was requirement from effects-based management of individual consents, to integrated management based on water management zones, and the management of cumulative effects of both water abstraction and land use intensification. In order to give effect to the CWMS vision and principles a collaborative Zone Committee process was established through the CWMS to enable community informed outcomes. The process the Selwyn Waihora Zone Committee went through in reaching its recommendations on Variation 1 is described in section 4 of this Report.

7.143 The CWMS and the Selwyn Waihora ZIP Addendum is the outcome of extensive consultation and community participation aimed at reaching a consensus as to how to best manage the freshwater resources in Canterbury and the Selwyn Waihora catchment. The CWMS has been endorsed by the Council and all of the territorial authorities in the Canterbury region. As such, it provides valuable guidance about how the people and communities of Canterbury wish to see provision for their wellbeing and health and safety, through the management of the use, development and protection of resources, including water and land. In addition, the CWMS and the Zone Committee process established under it, is one way that the Council has sought to involve the community, including iwi and hapū, in how best to give effect to the NPSFM 2011.

7.144 Although there is no statutory requirement for Variation 1 to incorporate or give effect to the entire content of the CWMS, the document as a whole is an important component in determining the most appropriate way of achieving the purpose of the RMA. A decision maker may also have regard to the CWMS as a whole as a relevant consideration. The CWMS is not a "strategy prepared under other Acts", in terms of section 61(2)(a)(i) of the RMA, and so is not a mandatory consideration under that section. However, section 61(2)(a) does not create an exhaustive list of considerations. The High Court has held that regard may be had to non-binding national policy documents, as relevant background material, even if those documents do not have any status under the RMA.[79] Further, it is submitted, that in having particular regard to the vision and principles of the CWMS, it is necessary to have regard to the CWMS as a whole and the Zone Committee process established under the CWMS in order to give effect to the vision and principles of the CWMS (and the NPSFM).

[79] *West Coast Regional Council v The Friends of Shearer Swamp* [2012] NZRMA 45.

7.145 Finally, it is also relevant that Objective 3.12 of the pLWRP provides that "When setting and managing limits, regard is had to community outcomes for water quality and water quantity". This is relevant to the section 32 analysis of Variation 1 and to the extent to which the policies, rules and other methods are the most appropriate way to achieve the objectives in the pLWRP.

CERA – recovery strategy

7.146 Pursuant to section 11 of the Canterbury Earthquake Recovery Act 2011 (CER Act), the Recovery Strategy for Greater Christchurch (Recovery Strategy) was developed and approved on 1 June 2012. Greater Christchurch under the CER Act means the districts of the Christchurch City Council, the Selwyn District Council, and the Waimakariri District Council and includes the adjacent coastal marine area. The Recovery Strategy directed changes to the RPS, but not to the pLWRP.

7.147 A regional plan, including any variation, cannot be interpreted or applied in a way that is inconsistent with the Recovery Strategy.[80] The Recovery Strategy is to be read together with and forms part of an RMA document (which includes a regional plan, proposed plan and variation) and the Recovery Strategy prevails where there is any inconsistency between it and the RMA document.[81] Further, no provision of the Recovery Strategy, as incorporated in an RMA document, may be reviewed, changed, or varied under Schedule 1 of the RMA.[82]

7.148 The Land Use Recovery Plan (LURP) is a recovery plan prepared in accordance with the CER Act and was gazetted on 6 December 2013. The LURP covers the urban area of Christchurch (except the central city area covered by the Christchurch Central Recovery Plan) and towns stretching from Lincoln, Prebbleton and Rolleston in the south to Kaiapoi, Rangiora and Woodend/Pegasus in the north.

7.149 The Christchurch Central Recovery Plan (CCRP) outlines the future development of central Christchurch and directed changes to the Christchurch City Plan. Variation 1 cannot be inconsistent with the LURP and the CCRP.[83]

7.150 Variation 1 is consistent with the Recovery Strategy and in particular with the goals for the recovery of the natural environment. Variation 1 is also consistent with the LURP and CCRP.

7.151 Some parts of Variation 1 have been inserted under section 27 of the CER Act. There have been no submissions on these parts of Variation 1.

[80] Section 15(1) of the CER Act.
[81] Section 15(2) of the CER Act.
[82] Section 15(3) of the CER Act.
[83] Section 23 of the CER Act.

Jurisdictional Issues

7.152 Variation 1 raises the following jurisdictional issues:

a. Late submissions;

b. Potentially invalid submissions, because they are not in the prescribed form or they are not "on" Variation 1;

c. Submissions which do not indicate a decision sought but which reserve the right to bring further 'alterative relief' at the hearing; and

d. Further submissions which do not conform with the requirements of clause 8 of Schedule 1 of the RMA.

7.153 For any particular change sought to Variation 1, the Council must consider whether a submission provides scope to make the change.

Late submissions

7.154 Some submissions on Variation 1 were lodged outside the statutory timeframe for lodging submissions. Clause 5(3)(b) of Schedule 1 provides that the closing date for submissions in the case of a variation to a plan must be at least 20 working days after public notification. In the case of a late submission, the Council may waive the failure to comply with the timeframes.[84]

7.155 The Council must not waive compliance with a time limit in accordance with section 37 unless it has taken into account:[85]

a. the interests of any person who, in its opinion, may be directly affected by the extension or waiver; and

b. the interests of the community in achieving adequate assessment of the effects of a proposal, policy statement, or plan; and

c. its duty under section 21 to avoid unreasonable delay.

7.156 The Council must ensure that every person who in its opinion is directly affected by the waiver of compliance is notified of the waiver.[86]

7.157 Submissions were lodged out of time by Mr D Rankin and L&M Group Limited. The CRC has treated these submissions as being within time due to their being no prejudice to any party.

[84] Section 37(1)(b).
[85] Section 37A.
[86] Section 37A(6).

Invalid submissions and submissions not "on" Variation 1

7.158 Several submissions on Variation 1 appear to be invalid as they either:

a. request no decision;

b. are not "on" Variation 1

7.159 A submission on a plan or variation must be in the prescribed form.[87]

7.160 A submission which requests no decision is not a valid submission and the Council is not able to give a decision on the submission under clause 10 of Schedule 1 if no details are included within the submission. The submissions made by Mr G Carter, Ms J Norriss and Mrs A Sommerville do not contain a specific decision requested and a decision will be required as to whether these are valid submission points.

7.161 In terms of scope, the right to make a submission is limited to submissions that are "on" Variation 1.[88] If a submission is not "on" Variation 1, the Council has no jurisdiction to consider it.

7.162 The Courts have endorsed a bipartite approach to deciding whether a submission is "on" a variation.[89]

7.163 First, it must reasonably fall within the ambit of the variation by addressing a change to the pre-existing status quo advanced by Variation 1.[90] For example, if a management regime in a plan for a particular resource is unaltered by the variation, a submission seeking a new management regime for that resource is unlikely to be "on" the variation, unless the change is merely incidental or consequential. Another indication that a submission is not on the variation is when the matters addressed by the submission are not adequately assessed in the section 32 evaluation.[91]

7.164 Secondly, whether there is a real risk that persons directly or potentially directly affected by the additional changes proposed in the submission have been denied an effective opportunity to respond to those additional changes in the variation process.

7.165 If the effect of regarding a submission as "on" a variation would be to permit a planning instrument to be appreciably amended without real opportunity for participation by those potentially affected, that will be a "powerful consideration" against finding that the submission was truly "on" the variation.[92] Where a submission is not "on" the variation, the submitter has other options: to submit an application for a resource consent; to seek a further public plan change; or to seek a private plan change.

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[87] Clause 6(5) of Schedule 1.
[88] Clause 6(1) of Schedule 1.
[89] *Christchurch City Council* HC Christchurch AP34/02, 14 March 2003.
[90] *Palmerston North City Council v Motor Machinists Ltd* [2013] NZHC 1290 at [80].
[91] *Palmerston North City Council v Motor Machinists Ltd* [2013] NZHC 1290 at [81].
[92] *Clearwater Resort Ltd v Christchurch City Council* HC Christchurch AP34/02, 14 March 2003 at [69].

7.166 As is also addressed elsewhere in this report the Council has at this stage identified the following submissions as not being 'on' Variation 1:

a. The submission Director General of Conservation seeks to add an inanga spawning site as an addition to Schedule 17 and also that significant habitats for Canterbury mudfish should be added to the schedule. Schedule 17 is un-amended by Variation 1 and accordingly this submission is not considered to be on Variation 1.

b. Several submitters (C McArthur, A McArthur, H McArthur and H Clouston) have requested changes to the regional rule on stock exclusion (rule 5.68). Relief in terms of changing the regional rule is not considered to be 'on' Variation 1.

c. Some submitters (including Beef + Lamb New Zealand) have sought to make changes to the region wide definition 'nitrogen baseline' definition. Again it is considered that changes to region wide definitions is outside the scope of Variation 1.

Submissions which reserve the right to bring alternative relief at the hearing

7.167 Several submissions on Variation 1 have not given details of the relief requested, and have instead stated that they reserve the right to bring further relief or alternatives at the hearing.

7.168 Submissions on Variation 1 were required to give details of the "specific provisions" of Variation 1 that the submission relates to and to include whether the submitter supports or opposes the specific provisions or wish to have them amended and provide reasons for these views. Submitters are also required to "give precise details" of the decision sought from the local authority.[93]

7.169 Arguably, submissions that reserve the right to bring further evidence at the hearing do not give precise details of the decision sought and any change made to Variation 1 in reliance on such a submission may be without jurisdiction.

7.170 The Council has an obligation to give public notice of a summary of decisions requested by persons making submissions on Variation 1.[94]

7.171 The Council has the power to direct that defects in a submission be rectified, and there may be no need to treat the submission as totally invalid.[95]

7.172 The following tests apply as to whether or not there is jurisdiction to make a change to a plan or variation:

a. The local authority must consider whether "any amendment made to the plan change as notified goes beyond what is reasonably and fairly raised in submissions

[93] Resource Management (Forms, Fees and Procedure) Regulations 2003, Form 5
[94] Clause 7 of Schedule 1.
[95] Section 37(2)(b).

on the plan change… It will usually be a question of degree to be judged in terms of the proposed change and of the content of submissions."[96]

b. The assessment of whether any amendment was reasonably and fairly raised in the course of submissions, should be approached in a realistic workable fashion rather than from the perspective of legal nicety.[97]

c. This approach requires that the whole relief package detailed in submissions be considered when determining whether or not the relief sought is reasonably and fairly raised in the submissions.[98]

7.173 It is important to note the purpose of the submission and further submission process as explained in *General Distributors Limited*:

> *"[55] One of the underlying purposes of the notification/submission/further submission process is to ensure that all are sufficiently informed about what is proposed. Otherwise the plan could end up in a form which could not reasonably have been anticipated resulting in potential unfairness.*
>
> *[56] There is of course a practical difficulty. As was noted in Countdown Properties at 165, councils customarily face multiple submissions, often conflicting, and often prepared by persons without professional help. Both councils, and the Environment Court on appeal, need scope to deal with the realities of the situation. To take a legalistic view and hold that a council, or the Environment Court on appeal, can only accept or reject the relief sought in any given submission would be unreal."*

7.174 The following factors may be relevant in considering whether a submission reasonably and fairly raises any particular relief:[99]

a. the submission must identify what issue is involved and some change sought in the proposed plan;

b. the local authority needs to be able to rely on the submission as sufficiently informative for the local authority to summarise it accurately and fairly and in a non-misleading way;

c. the submission should inform other persons what the submitter is seeking, but if it does not do so clearly, it is not automatically invalid.

7.175 Those submitters on Variation 1 that have reserved the right to bring further details of the relief sought at the hearing, will need to demonstrate how any changes to the Variation, which are sought as a result of any evidence brought at the hearing, are within the Council's jurisdiction to make.

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[96] *Countdown Properties (Northlands) Ltd v Dunedin City Council* (1994) 1B ELRNZ 150, at pp171-172, approved in *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59, Wylie J at [58]

[97] *Royal Forest & Bird Protection Society Inc v Southland District Council* [1997] NZRMA 408, Pankhurst J at p413, approved in *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59, Wylie J at [59].

[98] *Shaw v Selwyn District Council* [2001] 2 NZLR 277 at para 44, *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59, Wylie J at [60].

[99] *Campbell v Christchurch City Council* [2002] NZRMA 332 (EnvC) at [42] to [43].

Further submissions

7.176 A number of lengthy further submissions have been lodged on Variation 1. A further submission must be limited to a matter in support of or in opposition to an original submission.[100]

7.177 For this reason a further submission cannot extend the scope of the original submission and can only seek allowance or disallowance in whole or part of the original submission.[101]

7.178 In Telecom *NZ Ltd v Waikato District Council*[102], a proposed plan specified telecommunications as permitted activities in certain areas, and Telecom submitted that this categorisation should apply in specified additional areas. A further submission subsequently sought that the activity be non-complying in all areas. The Court held this further submission to be invalid and not an issue it could determine on appeal.

Summary regarding scope of submissions

7.179 In reaching a decision on Variation 1 the Council will have to consider the following matters.

7.180 First, the Hearing Commissioners will need to consider whether each submission is a valid submission and is "on" Variation 1 applying the tests in *Motor Machinists Ltd*.

7.181 Secondly, in order to establish whether there is jurisdiction to make an amendment to Variation 1, the Council must ask itself:[103]

a. Has a submitter raised a relevant 'resource management issue' in its submission? This may be in a specific or a general way.
b. Is the change contemplated by the Hearing Commissioners fairly and reasonably within the general scope of:
    i. An original submission; or
    ii. Variation 1 as notified; or
    iii. Somewhere in between.
c. Was the summary of the relevant submissions fair and accurate and not misleading?

7.182 Whether an amendment goes beyond what is reasonably and fairly raised in submissions will usually be a question of degree to be judged by the terms of the plan and the content of submissions. As set out above:

a. This should be approached in a realistic workable fashion rather than from the perspective of legal nicety, and requires that the whole relief package detailed in submissions be considered.[104]

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[100] Schedule 1, clause 8(2)
[101] *Offenberger v Masterton District Council* W053/96 (PT).
[102] *Telecom NZ Ltd v Waikato District Council* EnvC A074/97
[103] *Re Vivid Holdings Ltd* (1999) 5 ELRNZ 264 at [19].
[104] *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59 at [58]-[60].

b. This approach requires that the whole relief package detailed in submissions be considered when determining whether or not the relief sought is reasonably and fairly raised in the submissions.[105]

7.183 An amendment can be anywhere on the line between the proposed plan and the submission. Consequential changes can flow downwards from whatever point on the first line is chosen.[106]

7.184 Alterations to a plan change or variation that would not broaden the plan change beyond the limits of what was originally requested, nor extend it beyond what is reasonably and fairly to be understood from the content of submissions, or prejudice anyone who failed to lodge a submission on the original request, are within jurisdiction. Amendments required for clarity and refinement of detail are allowed on the basis that such alterations are considered to be minor and un-prejudicial.

7.185 A further submission cannot be used to extent the scope of an original submission on Variation 1.

7.186 To the extent that any submissions are potentially beyond the scope of Variation 1, or are without jurisdiction (including those that seek to reserve the right to bring alternative relief to the hearing), then those submitters will need to demonstrate how the changes they seek are within the Council's jurisdiction.

Variations and Clause 16B

7.187 Clause 16A of Schedule 1 of the RMA provides for variations to a proposed plan to be initiated at any time before the approval of the plan. Because the pLWRP has not yet been made operative, the changes sought to be made to the pLWRP as a result of the Selwyn Waihora Zone Committee's recommendations had to be made as a variation to the pLWRP (rather than a plan change)

7.188 Under Clause 16A(2) the provisions of Schedule 1 apply to Variation 1, with all necessary modifications, as if it were a change.

7.189 Because Variation 1 is a variation to the pLWRP (rather than a plan change), the provisions of clause 16B of Schedule 1 are also relevant.

[105] *Shaw v Selwyn District Council* [2001] 2 NZLR 277 at para 44, *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59, Wylie J at [60].
[106] *Campbell v Christchurch City Council* [2002] NZRMA 352 (EnvC) at [20].

7.190 Clause 16B states:

> ***16B Merger with proposed policy statement or plan***
>
> *(1) Every variation initiated under clause 16A shall be merged in and become part of the proposed policy statement or plan as soon as the variation and the proposed policy statement or plan are both at the same procedural stage; but where the variation includes a provision to be substituted for a provision in the proposed policy statement or plan against which a submission or an appeal has been lodged, that submission or appeal shall be deemed to be a submission or appeal against the variation.*
>
> *(2) From the date of public notification of a variation, the proposed policy statement or proposed plan shall have effect as if it had been so varied.*
>
> *(3) Subclause (2) does not apply to a proposed policy statement or plan approved under clause 17(1A).*
>
> *(Our emphasis.)*

7.191 The wording in clause 16B raises two issues:

a. How submissions on the pLWRP are to be treated in light of Variation 1; and

b. The effect of Variation 1 on pLWRP provisions.

Submissions on the pLWRP

7.192 Clause 16B(1) is in two parts, separated by a semi-colon. The second part is intended to protect the position of a submitter whose submission or reference was lodged before a variation substituted a provision for the provision against which a submission or reference had been lodged. It does not apply to submissions lodged after the variation has been notified.[107]

7.193 "Substitute" is defined in the Oxford Online Dictionary as "use or add in place of".

7.194 Applying clause 16B to Selwyn Te Waihora – Variation 1, to the extent that any provision of the pLWRP is substituted by a provision of the Variation, then any submission on that provision must be treated as being a submission on the Variation.

7.195 The most obvious example of provisions of the pLWRP being substituted by provisions in the Variation 1 (at least in so far that the region wide rules apply in the Selwyn Waihora catchment) are the "farming activity" rules. For example, as a result of Variation 1 the region wide nutrient management rules in the pLWRP (Rules 5.41 to 5.56A) no longer apply in the Selwyn Waihora catchment. Instead Rules 11.5.6 to 11.5.13 apply in place of the regional wide rules.

[107] *Shaw v Selwyn District Council* [2001] 2 NZLR 277; [2001] NZRMA 399 (HC).

7.196 While the only provisions directly being substituted by the Variation are those in Section 11 of the pLWRP, the effect of the Variation is to substitute a number of the region wide rules, with specific sub-regional rules. The new sub-regional rules should therefore be treated as substituting a provision (i.e. the particular region wide rule) and therefore any submissions on the specific provision being substituted should be treated as being on the Variation. For example, this will mean that any submissions on rules 5.111 to 5.114 of the pLWRP will need to be treated as submissions on the rules in the Variation relating to small water takes. The same will apply in respect of the farming activity rules, etc.

7.197 All submitters on the pLWRP were notified in writing that submissions on provisions of the pLWRP being substituted by Variation 1 could be deemed to be submissions on Variation. Submitters were asked to advise the Council if they did not wish their submission on the pLWRP to be treated as a submission on Variation 1.

7.198 To the extent that submissions on the pLWRP are deemed to be submissions on Variation under clause 16B the Council will be obliged under clause 10 of Schedule 1 of the RMA to make a decision on the provisions and matters raised in submission.

7.199 Clause 10(2) and (3) relevantly provide:

> *"(2) The decision –*
>
> *(a) must include reasons for accepting or rejecting the submissions and, for that purpose, may address the submission by grouping them according to –*
>
> *(i) the provisions of the proposed statement or plan to which they relate; or*
>
> *(ii) the matters to which they relate; and*
>
> *…*
>
> *(3) To avoid doubt, the local authority is not required to give a decision that addresses each submission individually …"*
>
> *(Our emphasis.)*

7.200 The provisions set out in the notified version of the pLWRP changed quite significantly through the hearing process on the pLWRP to the version now contained in the "decisions version" of the pLWRP. Many of the submissions on the pLWRP will not be particularly relevant to making decisions on Variation 1. Nevertheless clause 16B(1) ensures that no one who lodged a submission on the pLWRP is excluded from participating in the hearing on Variation 1.

7.201 It is anticipated that in making a recommendation to the Council on Variation 1, that to the extent any pLWRP submissions are deemed to be submissions on Variation 1, the Hearing Panel will be able to address the pLWRP submissions by grouping them under clause 10(2).

7.202 Only two further submitters, Fish and Game and Mr Grigg, have sought through their further submissions to rely on their earlier pLWRP submissions. If the remainder of the pLWRP is made operative under clause 17 of Schedule 1 before a decision on Variation 1 is made, then

Variation 1 will be treated as a plan change to the (then operative) Land and Water Regional Plan under clause 17(1B).

The effect of the Variation on the pLWRP provisions

7.203 The first part of clause 16B(1), set out above, deals with the effect of a Variation and there is conflict between it and clause 16B(2) as to whether a proposed variation should be considered separately from the current plan, or whether it overrides it as soon as the variation is notified.[108]

7.204 This conflict is relevant in a resource consenting context (in terms of what the proposed plan is for the purposes of undertaking a section 104 assessment). In *Awly Developments Limited v Christchurch City Council*[109] the Court reconciled the two subclauses by limiting clause 16B(1) to the procedural aspects of the passing of a proposed plan and variation through to operative status and found that the effect of clause 16B(2) is that, in the resource consent process, regard is to be had to the proposed district plan as if it had been altered by a publicly notified variation, so it is not necessary to have regard to the proposed district plan as it was before the variation.

7.205 When considering Variation 1 itself, the appropriateness of the existing pLWRP provisions will be relevant in the context of the section 32 assessment. It is not considered that clause 16B(2) is intended to mean that provisions of the pLWRP are not relevant to determining whether the Variation 1 provisions meet the tests in section 32.

7.206 While in relation to a previous version of section 32, the Environment Court in *Infinity Group v Queenstown-Lakes District Council* when addressing the effect of clause 16B, accepted in that case (which concerned a rezoning) that there is no presumption in favour of any particular zoning of the site, the Court being required to determine the most appropriate zoning for the land falling within the range between the status quo and that proposed by the variation.[110] The Court also inferred that "subclause (2) [of clause 16B] is intended to apply to resource consent applications and enforcement action, not to reference appeals."[111]

Interim Recommendations

7.207 The Hearing Commissioners have been appointed under section 34A to make recommendations to Canterbury Regional Council on Variation 1, which the Council will then make a decision on under clause 10 of Schedule 1 of the RMA.

[108] *Awly Developments Ltd v Christchurch City Council* EnvC C103/02 (EC)
[109] *Awly Developments Ltd v Christchurch City Council* EnvC C103/02 (EC)
[110] *Infinity Group v Queenstown-Lakes District Council* EnvC C010/2005 (EC) at [54].
[111] *Infinity Group v Queenstown-Lakes District Council* EnvC C010/2005 (EC) at [55].

7.208 Under the ECan Act, appeals to the Environmental Court against the decisions made by the Council under clause 10 are restricted, and appeals may only be made to the High Court on points of law.

7.209 It is almost inevitable that as a result of making recommendations on whether to accept or reject the submissions on Variation 1 that the Hearing Commissioners will recommend some changes be made to Variation 1. These changes will be contained in a final "decisions version" of Variation 1. Changes made to Variation 1 may have the potential to have unintended consequences or minor errors and to address this potential the Council requests that the Hearing Commissioners produce an interim report to give the Council and submitters a chance to comment on the recommendations.

7.210 It is intended that such a process should be similar to that provided under section 149Q of the RMA in relation to matters of national significance decided by a Board of Inquiry under Part 6AA of the RMA.

7.211 Such a process for a Council initiated variation is not prohibited by the RMA:

a. Clause 10 of Schedule 1 only requires that the local authority give a decision on the provisions and matters raised in submissions, whether or not a hearing is held on the proposed policy statement of plan concerned;
b. Section 39 requires that where a hearing is held in relation to a variation that it should be held in public and that the authority may "establish a procedure that is appropriate and fair in the circumstances"; and
c. Section 41C allows the Hearing Commissioners to, either before, or at the hearing, make directions to direct the order of business at the hearing and request that a person who has made a submission to provide further information.
d. While there is a time limit for completion of an adjourned hearing on a resource consent application[112] there is no such prohibition for hearings of variations or plan changes.
e. The only restriction under the Schedule 1 procedure is that under clause 10 the local authority must give its decision no later than 2 years after notifying the proposed policy statement or plan.

7.212 It is respectfully suggested that the Hearing Commissioners could, before making their final recommendations to the Council, issue a draft recommendations report in respect of Variation 1 and invite submitters to send any comments on minor or technical aspects of the report to the Council no later than 10 working days after the date of the invitation.

7.213 It is anticipated that comments on minor or technical aspects of the report would be restricted to:

a. include comments on minor errors in the report, or that there are omissions in the report (for example, the report does not address a certain issue); but

[112] Section 103A provides that a hearing must be concluded no later than 10 working dates after the applicant's right of reply has been executed.

b. not include comments on the Hearing Panel's recommendations or reasons for the recommendations.

Legal Issues raised in Submissions

7.214 The following section of this report addresses specific legal issues raised by submitters (to the extent that these have not been addressed above).

Water transfers

7.215 Variation 1 contains provisions restricting the transfer of water permits in the Rakaia-Selwyn and Selwyn-Waimakariri water allocation zones. The rules in Variation 1 make the transfer of a water permit a prohibited activity other than when:

a. for surface water, the point of take remains within the same surface water catchment and complies with the relevant minimum flow and restriction regimes (restricted discretionary under rule 11.5.37);

b. for groundwater, the point of take in within the some groundwater allocation zone or combined surface and groundwater allocation zone and the transfer is not from down-plains to up-plains (amongst other conditions). If the transfer is within the Rakaia-Selwyn or Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones, 50% of the volume of transferred water is to be surrendered (restricted discretionary under rule 11.5.37); and

c. the take is to be transferred to a local authority and is to be used for community water supply (discretionary activity under rule 11.5.38).

7.216 HydroTrader Limited has lodged a submission stating that a condition requiring the surrender of allocation is not available under section 77A of the RMA, as it is not a condition that would be available under section 108 and that it reduces an existing grant in a way that is provided for only through consent reviews under section 128 or cancellation of unused consents under section 126.

7.217 HydroTrader's submission also states that section 136 only provides for the making of rules that either permit a water transfer or enable an application for water transfer to be made.

7.218 HydroTrader’s submission raises two issues:

a. Can the Council assign an activity status on the transfer of a water permit?

b. If so, can the Council impose a condition requiring a consent holder to surrender part of his / her consent?

7.219 These two issues were both before the Hearing Commissioners in respect of the submissions on the pLWRP.

Can the Council assign an activity status on the transfer of a water permit?

7.220 Section 136 of the RMA sets out the provisions relating to the transferability of water permits. Regional councils can facilitate the transfer of water take permits (or the interest in water take permits) from site to site. Section 136 sets out that a transfer of a water permit may be expressly provided for in a regional plan, if no such provision is made in the regional plan, then permit transfers are to be considered by Council through the process set out in section 136(4) of the RMA. Relevantly, section 136(2) provides:

> *(2) A holder of a water permit granted other than for damming or diverting water may transfer the whole or any part of the holder's interest in the permit—*
>
> *…*
>
> *(b) To another person on another site, or to another site, if both sites are in the same catchment (either upstream or downstream), aquifer, or geothermal field, and the transfer—*
>
> *(i) Is expressly allowed by a regional plan; or*
>
> *(ii) Has been approved by the consent authority that granted the permit on an application under subsection (4)*
>
> *(3) A transfer under any of subsections (1), (2)(a), and (2)(b)(i) shall have no effect until written notice of the transfer is received by the consent authority that granted the permit.*
>
> *(4) An application under subsection (2)(b)(ii)—*
>
> *(a) Shall be in the prescribed form and be lodged jointly by the holder of the water permit and the person to whom the interest in the water permit will transfer; and*
>
> *(b) Shall be considered in accordance with sections [39 to 42A,] 88 to 115, 120, and 121 as if—*
>
> *(i) The application for a transfer were an application for a resource consent; and*
>
> *(ii) The consent holder were an applicant for a resource consent,—*
>
> *except that, and in addition to the matters set out in section 104, the consent authority shall have regard to the effects of the proposed transfer, Including the effect of ceasing or changing the exercise of the permit under its current conditions, and the effects of allowing the transfer.*
>
> *(5) Where the transfer of the whole or part of the holder's interest in a water permit is notified under subsection (3), or approved under subsection (2)(b)(ii), [and is not for a limited period,] the original permit, or that part of the permit transferred, shall be deemed to be cancelled and the interest or part transferred shall be deemed to be a new permit—*
>
> *(a) On the same conditions as the original permit (where subsection (3) applies); or*
>
> *(b) On such conditions as the consent authority determines under subsection (4) (where that subsection applies).*

7.221 The scheme provided by section 136 suggests that a transfer under subsection (2)(b)(i) occurs only by way of a permitted activity rule in a regional plan providing for such a transfer, with the regional council taking a passive role in the transfer. In comparison, a transfer under subsection (2)(b)(ii) occurs only where an application to the regional council is granted, where the council has an active role in the transfer. It is possible that an application under subsection (2)(b)(ii) may be pursuant to further rules in a regional plan governing the application process.

7.222 The words "expressly allowed" in subsection (2)(b)(i) suggest that this is by way of permitted activity status in a regional plan, thus allowing (i.e. permitting) the transfer to occur. This interpretation is reinforced by the workability of the section. Therefore, at the very least, a permitted activity status can be assigned to the transfer of a water permit. This could indicate that further activity statuses are also available.

7.223 Subsection (3) provides that a transfer under subsection (2)(b)(i) has no effect until written notice is received by the consent authority. This provides that the consent authority does not have any discretion as to whether the transfer is granted; instead the consent authority has a mere administrative role in receiving notice of the transfer. Furthermore, a transfer under subsection (2)(b)(i) is deemed to be a new permit on the same conditions as the original permit (subsection (5)(a)). As such, the consent authority does not have the ability to revise permit conditions where a transfer is pursuant to subsection (2)(b)(i).

7.224 If a plan does not expressly allow for the transfer of a water permit under subsection (2)(b)(i), an applicant may still apply to the consent authority for a transfer pursuant to subsection (2)(b)(ii). This situation could occur either where the plan does not contain a permitted activity transfer provision, or where the proposed transfer will not comply with the permitted activity conditions.

7.225 A consent authority has a more active role in relation to a transfer under subsection (2)(b)(ii). Subsection (2)(b)(ii) provides that the transfer has been approved by the consent authority on an application under subsection (4). Subsection (4) sets out that an application shall be considered as if it is an application for resource consent. In addition to the matters for consideration in section 104, the consent authority must have regard to the effects of the proposed transfer. A transfer application under subsection (2)(b)(ii) is not guaranteed to be granted.

7.226 Where a transfer under subsection (2)(b)(ii) is approved, a new water permit is deemed to be granted, and the former permit cancelled. However, a transfer under subsection (2)(b)(ii) may be on such conditions as determined by the consent authority. This gives the consent authority scope to review the conditions of the water permit.

7.227 There is nothing in section 136 which suggests that an application under subsection (2)(b)(ii) could not be pursuant to further rules in the plan (for example under restricted discretionary or discretionary activity rules).

7.228 Further, section 68(1) of the Act, states that a regional council may, for the purpose of carrying out its functions under the Act (other than those described in paragraphs (a) and (b) of section 30(1)), include rules in a regional plan. Section 30 of the Act lists the functions of regional councils for the purpose of giving effect to the Act in its region:

(h) Any other functions specified in this Act.

7.229 One of the Regional Council's functions under section 136 of the Act is the consideration of the transfer of water permits. As such, it is considered that the Council has the power to make a rule for the purpose of that function.

7.230 In a recent decision, the Environment Court expressly endorsed the use of permitted and restricted discretionary activity status to enable water permit transfers. In *Carter Holt Harvey v Waikato Regional Council*[113], a variation to the relevant Regional Plan addressed water transfers where previously there were no rules in the plan expressly allowing a transfer. Variation 6 introduced a permitted activity rule for the transfer of water permits, subject to a number of conditions. The plan change also introduced a restricted discretionary and non-complying transfer rule. The Court stated:

> *"[456] We are satisfied that in the interests of efficiency, it is appropriate to have rules enabling the transfer of water permits. We are also satisfied that the Council has struck an appropriate balance by enabling transfers, either by way of permitted or restricted discretionary activity status, but at the same time ensuring that any potential adverse effects on the Waikato River are avoided, remedied or mitigated."*

7.231 The Environment Court confirmed the provisions of Variation 6 in February 2012 and the variation became operative on 10 April 2012.

7.232 In respect of the fact that Variation 1 seeks to make transfers a prohibited activity in certain circumstances, nothing in section 136(2)(b) prevents describing a transfer as a prohibited activity and if it is possible to attribute discretionary activity status to a transfer, it must also be legally possible to attribute prohibited activity status.

7.233 Further, if the transfer of a water take is legally able to be categorised as a prohibited activity, the question of whether it should be, will turn to the appropriateness given the particular context. The Court of Appeal in *Coromandel Watchdog of Hauraki Inc v Chief Executive of the Ministry of Economic Development*[114] considered the appropriateness of prohibited activity status. The types of situations in which the Court considered prohibited activity status would be appropriate included:

a. Where the council takes a precautionary approach. If the local authority has insufficient information about an activity to determine what provision should be made for that activity in the local authority's plan, the most appropriate status for that activity may be prohibited activity. This would allow proper consideration of the

[113] *Carter Holt Harvey v Waikato Regional Council* [2011] NZEnvC 380

[114] *Coromandel Watchdog of Hauraki Inc v Chief Executive of the Ministry of Economic Development* (2007) 13 ELRNZ 279; [2008] 1 NZLR 562; [2008] NZRMA 77.

likely effects of the activity at a future time during the currency of the plan when a particular proposal makes it necessary to consider the matter, but that can be done in the light of the information then available.

b. Where the council takes a purposively staged approach. If the local authority wishes to prevent development in one area until another has been developed, prohibited activity status may be appropriate for the undeveloped area. It may be contemplated that development will be permitted in the undeveloped area, if the pace of development in the other area is fast;

c. Where the council is ensuring comprehensive development. If the local authority wishes to ensure that new development should occur in a co-ordinated and interdependent manner, it may be appropriate to provide that any development which is premature or incompatible with the comprehensive development is a prohibited activity. In such a case, the particular type of development may become appropriate during the term of the plan, depending on the level and type of development in other areas;

d. Where it is necessary to allow an expression of social or cultural outcomes or expectations. Prohibited activity status may be appropriate for an activity such as nuclear power generation which is unacceptable given current social, political and cultural attitudes, even if it were possible that those attitudes may change during the term of the plan;

e. Where it is intended to restrict the allocation of resources, for example where a regional council wishes to restrict aquaculture to a designated area. It was suggested that, if prohibited activity status could not be used in this situation, regional councils would face pressure to allow marine farms outside the allocated area through non-complying activity consent applications; and

f. Where the council wishes to establish priorities otherwise than on a "first in first served" basis, which is the basis on which resource consent applications are considered.

7.234 For all these reasons, it is considered that the Council has the power to make rules which control the transfer of water permits, and to apply an activity status (including prohibited activity status) to those rules.

Can the Council impose a condition requiring a consent holder to surrender part of his / her consent?

7.235 HydroTrader's submission contends that the partial surrender of a consent is potentially invalid under section 108 and therefore not available under section 77A(1)(c).

7.236 Section 108 provides that a resource consent can be granted on any condition that the consent authority considers appropriate. However, this power is not unlimited and is subject to common law principles.

7.237 The Newbury tests provide that the power to impose conditions on a planning consent is not unlimited. To be valid at law, a condition must:[115]

a. Be for a resource management purpose, not an ulterior one;
b. Fairly and reasonably relate to the development authorised by the consent to which the condition is attached; and
c. Not be so unreasonable that a reasonable planning authority, duly appreciating its statutory duties, could not have approved it.

7.238 If the purpose behind requiring the partial surrender of the original consent is to address the over-allocation of water resources, in line with the NPSFM 2011, CRPS and the overall purpose of sustainable management, it could be said that the rule is for a resource management purpose.

7.239 HydroTrader's submission states "[a condition requiring surrender of allocation] reduces an existing grant in a way that is provided for only through consent reviews under s128 or cancellation of unused consents under s126".

7.240 Section 136(5)(b) makes it clear that the "new" consent can be on such conditions as the consent authority determines.

7.241 The requirement to surrender a certain amount of allocated water only affects the status of the transfer; it does not affect the original grant of the consent. The original grant of consent does not include the right to transfer that water to any other use or user within a catchment. Section 136(5)(b) sets out that the transferred consent can be granted on any conditions that the consent authority thinks appropriate. Further, section 136(4) makes it clear that the consent authority must have regard to the effects of the proposed transfer; however, these matters are in addition to the matters in section 104.

7.242 It is considered that requiring the surrender of part of the allocated water would not negate the grant of the original consent, as the applicant is not compelled to transfer the water and the original permit would still be in effect, with the original amount of allocated water available. There may be certain situations where it is appropriate for permits in over-allocated catchments to be transferred without any surrender of water. However, Variation 1 has taken the approach that this should not be allowed in the Selwyn Te Waihora catchment given the over-allocation of water in the catchment.

7.243 It is submitted that this approach (of imposing prohibited activity status) gives effect to the NPSFM 2011 and the RPS.

7.244 A regional plan must give effect to the NPSFM 2011 (s 67(3)(a)). The NPSFM 2011 provides objectives and policies in relation to the management of freshwater quantity. These are set out above, but most relevantly in relation to transfer, the NPSFM 2011 requires the Council:

[115] *Newbury DC v Secretary of State for the Environment*; *Newbury DC v International Synthetic Rubber Co Ltd* [1981] AC 578; [1980] 1 All ER 731 (HL).

Objective B2
To avoid any further over-allocation of fresh water and phase out existing over-allocation.

Policy B3
By every regional council making or changing regional plans to the extent needed to ensure the plans state criteria by which applications for approval of transfers of water take permits are to be decided, including to improve and maximise the efficient allocation of water.
…
(Our emphasis)

7.245 The above objectives and policies of the NPSFM 2011 (along with the remaining water quantity objectives and policies) make it clear that the over-allocation of water resources is something that the Council must address. Policy B3 demonstrates that transfer of water permits is one way by which a regional council can improve and maximise the efficient allocation of water. In line with the NPSFM 2011, Variation 1 requires the surrender of allocated water as the Selwyn Waihora catchment is an over-allocated catchment. If a plan does not provide transfer provisions, section 136 only provides that an application for a transfer can be made, it does not provide that such application must be granted. Under section 136, the consent authority may grant the application, and this grant may be on different conditions to that of the original consent.

7.246 A regional plan must also give effect to a regional policy statement (section 67(3)(c)). The RPS provides water quantity measures. Issue 7.1.4 and the explanation provide:

Issue 7.1.4 — The benefits of and demand to abstract and use fresh water for economic well-being and the costs and effects of meeting this demand and realising benefits.
…
Both the National Policy Statement and the Canterbury Water Management Strategy include specific reference to the transfer of water permits as a means to improve and maximise the efficient allocation of water.

Section 136 of the RMA provides for the transfer of water permits under certain circumstances and subject to certain requirements, including expressly allowing for it in a regional plan. Where a water resource is close to or fully allocated, transfer mechanisms can promote the efficient use of water resources, especially where potential demand may exceed availability of water for utilisation. In the case of fully allocated catchments, transfers will need to be considered in a comprehensive and integrated manner.

7.247 Issue 7.1.5 – Inefficient allocation and use of water explains "both the National Policy Statement on Freshwater Management and the Canterbury Water Management Strategy

include specific reference to the transfer of water permits as a means to improve and maximise the efficient allocation of water."

7.248 Policy 7.3.4(2) provides:

> *Where the quantum of water allocated for abstraction from a water body is at or exceeds the maximum amount provided for in an environmental flow and water allocation regime:*
>
> *(a) avoid any additional allocation of water for abstraction or any other action which would result in further over-allocation; and*
>
> *(b) set a timeframe for identifying and undertaking actions to effectively phase out over-allocation; and*
>
> *(c) effectively addresses any adverse effects of over allocation in the interim.*

7.249 The principal reasons and explanation to Policy 7.3.4 clarify that "[f]or the purposes of Policy 7.3.4(2)(a), the renewal of water permits are not considered to be additional allocation which would result in further over-allocation". It is likely that a transfer of a water permit would also not be considered an additional allocation which would result in over-allocation; however, transfer provisions can be a way of improving efficient allocation.

7.250 Method (g) to Policy 7.3.8 provides that the Council will "[s]et the conditions and circumstances for the transfer of water permits to take or divert water within a water body and avoiding any transfers that would be inconsistent with Policy 7.3.4."

7.251 Method (3)(a) to Policy 7.3.13 provides:

> *(3) Provide procedures and mechanisms to facilitate stewardship and self-management of water resources within the conditions set by a regional plan or resource consent, including:*
>
> *(a) localised transfer of water allocations between consent holders, subject to safeguards to prevent unintended consequences for the environment or other users;*

7.252 The RPS makes it clear that in over-allocated catchments, the transfer of water permits will be an important mechanism in addressing efficient allocation. Therefore, it may be appropriate that transfer provisions aim to phase out over-allocation by requiring a partial surrender of water allocated by the original permit.

Cultural Landscapes/Values Management Area

7.253 Variation 1 establishes a Cultural Landscape/Values Management area encompassing Te Waihora and its margins, wetlands, springs and tributaries to recognise the significance of the area to Ngāi Tahu and to provide for the relationship of Ngāi Tahu with the Lake.

7.254 Land within the Cultural Landscape/Value Management area has certain additional restrictions on its use, including that discharges of wastewater from new on-site domestic wastewater treatment systems cannot occur as a permitted activity, effects on mahinga kai,

wahi tapu or wahi taonga must be considered in relation to certain region wide rules; and farm environment plans must be prepared from 1 July 2015 for all properties greater than 10 hectares. A number of submitters have questioned the use of the Cultural Landscape/Values Management area and have sought that the area should not apply to their land.

7.255 The directions in sections 63 to 67 of the RMA are most relevant when assessing how cultural landscape provisions fit within the ambit of a plan dealing with water quality and quantity. Relevantly, these provisions require the Council:

a. to prepare plans to assist it to carry out its functions (section 63);
b. to consider the desirably of preparing a regional plan whenever any significant concerns of tangata whenua for their cultural heritage in relation to natural or physical resources (section 65(3)(e)); and
c. to give effect to any national policy statement, any New Zealand Coastal Policy Statement and any regional policy statement (section 67) in the Variation.

7.256 The functions of CRC under section 30 include establishing, implementing and reviewing objectives, policies and methods to achieve integrated management or natural and physical resources. Section 30(1)(e) and (f) deal explicitly with taking, use, damming and diversion of water, along with controlling discharges of contaminants into or onto land, water and discharges of water to water.

7.257 Section 65(3) also provides guidance, it states:

> *"(3) Without limiting the power of a regional council to prepare a regional plan at any time, a regional council shall consider the desirability of preparing a regional plan whenever any of the following circumstances or considerations arise or are likely to arise:*
>
> *…*
>
> *(e) Any significant concerns of tangata whenua for their cultural heritage in relation to natural and physical resources:*

7.258 Cultural values are also highly relevant under Part 2 of the Act too.

7.259 In this case, the provisions give effect to the higher order directions including, Policy 14 of the NZCPS providing for the promotion of restoration and rehabilitation of the natural character of the coastal environment including by restoring cultural landscape features; Objective 12.2.2 of the RPS which requires historic cultural landscapes to be identified and managed; Policy 13.3.3 of the RPS requiring significant cultural landscape to be protected from inappropriate subdivision, use and development; and Policy D1 of the NPSFM 2011

7.260 The provisions also help achieve the objectives of the pLWRP, in particular Objective 3.1.

8 Format and Assumptions[116]

8.1 This section of the Section 42A Report summarises and analyses the submissions made in respect of Variation 1: Selwyn Te Waihora of the proposed Land and Water Regional Plan. This section details the recording to submissions, the assumptions made in respect to the Section 42A reporting and the format of the Section 42A report.

Submissions and analysis

8.2 In all, 118 submissions were received on Variation 1: Selwyn Te Waihora to the proposed Land and Water Regional Plan, and 63 further submissions.

***Objective*[117] and the Summary of Decisions Requested**

8.3 *Objective* is a software package that the Canterbury Regional Council has utilised for the recording and management of submissions. The software provides a forum for online submissions and the entry of hard-copy submissions.

8.4 The use of *Objective* required each submission point to be recorded against a particular provision of the Variation. In a number of cases the submitter did not state the provision they were submitting on but there is an obvious decision requested and therefore it was possible to record the submission against a single provision or a number of provisions.

8.5 Some submission points, although listed in a submission against a single provision, have also been recorded against other relevant provisions that the submission logically relates to.

8.6 Other submissions discussed generalised issues with the Variation and were put against the whole Variation, Section 11, Section 11.4 Policies or Section 11.5 Rules.

8.7 Where a submission did not seek a specific decision but raised an issue of concern, the issue has been entered in the summary of decisions requested as 'No specific decision requested' and identified the concern of the submitter.

8.8 Submitters that did not identify their position on a provision were recorded as in opposition.

[116] This and all following sections of this Report have been primarily prepared by Matthew McCallum-Clark

[117] *"Objective"* is the name of a proprietary software package to enter and manage submissions that Canterbury Regional Council uses.

Further Submissions

8.9 The input of further submissions into the *Objective* database included a number of assumptions.

8.10 A number of submitters requested support in part or oppose "in part". Clause 8(2) of the 1st Schedule to the RMA states: "*A further submission must be limited to a matter in support of or in opposition to the relevant submission made under clause 6.*" On this basis, further submissions have been categorised as "support" or "oppose" only. A further field was added to *Objective* for recording the "in part" aspect, where relevant. For example, when entering a further submission that "supports in part", support was selected and "in part" was entered into the additional field.

8.11 Some submitters recorded "Support in part/Oppose in part". The decision was made to adopt the first part of the submitter request, for example "Support in part/Oppose in part" would be recoded as "Support" in *Objective* and "in part" was entered into the additional field.

8.12 A small number of further submissions were listed as "neutral". In this case, the further submission was recorded, with the neutral position recoded in the additional field. Neither "support" nor "oppose" was selected. Of the further submission points, "neutral" is only stated two to three times.

8.13 A number of standardised further submissions were lodged, generally in support of either the entire Federated Farmers or Ellesmere Irrigation Society submissions. These were recorded as "pro-forma further submissions". Some submitters listed specific further submission points in addition to the support for one or more submissions in their entirety. Rather than have many further submission points lodged against every submission point of a small number of submitters, a separate list of these further submissions that support or oppose an entire submission has been compiled.

Reporting assumptions and disclaimers

8.14 In preparing the evaluation of the submissions and further submissions lodged on Variation 1, a number of the assumptions have been made.

8.15 Individual provisions of the Variation received a number of the submissions and to avoid identifying every submitter these have been grouped in the discussion of individual policies or rules. This means that individual submitters are often not identified. The reporting on submitters is also often generalised e.g. "a large number of submissions were received on Policy…".

8.16 There are further submissions on the majority of submission points. The further submissions, as discussed above, have been reviewed and entered into *Objective* against the relevant submission point. Again, because further submissions were received on the majority of

submission points the reporting only identifies further submissions when a number of submitters identify their opposition or support of submission points or raise particular issues.

8.17 The Report is organised by topics. The topics surround the issues in contention, as identified in the submissions, including Cultural Landscapes/Values Management Areas, Nutrient Management, Sediment and Microbial Contaminants and Stock Exclusion.

8.18 During the development of Variation 1 and throughout the submission and further submission process, the National Policy Statement for Freshwater Management 2011 (NPSFM 2011) was in effect. At a late stage during the preparation of this Section 42A Report, the NPSFM 2011 was amended. The amended NPSFM 2014 has effect from 1 August 2014, after the publication of this Report but before the hearing commences. The CRC is presently analysing the amendments and the implications. On this basis, this Report refers to the NPSFM 2011, and the NPSFM 2014 amendments and implications will be addressed at the hearing.

8.19 Recommendations are made where appropriate, and these are either to retain provisions without amendment, add to or amend provisions (with amendment shown by way of strikeout and underlining) or to delete the provisions. However, there are a number of instances where no recommendation is made. This is generally because the submissions lack sufficient specifics on the decision sought, the issue in contention is finely balanced and it is appropriate to defer a recommendation until the evidence has been given, or the provision is related to a number of others that have also been challenged and the overall relief package is somewhat unclear.

Abbreviations used

8.20 Generally submitters' names have been used in full. However, the following abbreviations are used.

Abbreviated Name	Full submitter Name
New Zealand King Salmon Limited	NZ King Salmon
Selwyn District Council	Selwyn DC
Ravensdown Fertiliser Co-operative Limited	Ravensdown
New Zealand Defence Force	NZ Defence Force
Royal New Zealand Forest and Bird Protection Society	Forest and Bird
Horticulture New Zealand	Horticulture NZ
ANZCO, CMP Canterbury & CMP Rakaia	ANZCO & CMP
Irrigation New Zealand Inc	Irrigation NZ
Trustpower Limited	Trustpower
Synlait Farms Ltd	Synlait Farms
Beef +Lamb New Zealand	Beef + Lamb NZ
Ballance Agri-Nutrients Limited	Ballance
Fish and Game Council North Canterbury	Fish and Game

North Canterbury Province of Federated Farmers NZ Inc	Federated Farmers
Fonterra Co-operative Group Limited	Fonterra

8.21 Abbreviations used in the text generally:

RMA	Resource Management Act 1991
NRRP	Canterbury Natural Resource Regional Plan
pLWRP	Proposed Land and Water Regional Plan
NPSFM	National Policy Statement for Freshwater Management 2011
RPS	Canterbury Regional Policy Statement 2013
CRC	Canterbury Regional Council
ECan Act	Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010

9 Section 11 - Introduction

9.1 The introduction to Section 11 – Selwyn Te Waihora of the proposed Land and Water Regional Plan (pLWRP) introduces the particular issues for this catchment and the major responses. It is based on the Selwyn-Waihora Zone Committee Zone Implementation Programme Addendum 2013 (ZIP Addendum) with reference to the Zone Committee's long term goal for the Te Waihora/Lake Ellesmere Catchment and includes a summary of the non-regulatory components of the ZIP Addendum.

9.2 Variation 1 substantially amends the existing Section 11 – Selwyn Te Waihora introduction text, including Sections 11.1, 11.2, and 11.3. The proposed amendments received submissions from 16 submitters, with a majority requesting changes. A number of further submissions, both in support of and opposed to various requested changes were received.

Section 11 – Selwyn Te Waihora

9.3 The following text from Variation 1 identifies the amendments to the introduction to Section 11:

> *Section 11 - Selwyn Waihora*
> *The area covered by this section is shown on the map below. It includes the foothills catchment of the Selwyn River/Waikirikiri and its tributaries, the plains between the Waimakariri and Rakaia Rivers, the ~~Selwyn and~~ Halswell River/Huritini~~s~~, and a number of other lowland streams and ephemeral waterways of Banks Peninsula that flow into Te Waihora/Lake Ellesmere. ~~Te Waihora/Lake Ellesmere is central to Ngāi Tahu values and culture.~~ This section does not set flow and allocation regimes for the Rakaia and Waimakariri Rivers. These are contained in the National Water Conservation Order (Rakaia River) Order 1998 and the Waimakariri River Regional Plan.*
>
> **[map replaced]**
>
> ~~*The following sustainable water management priority outcomes have been identified by the Selwyn Waihora Zone Committee:*~~
> - ~~*Thriving communities and sustainable economies.*~~
> - ~~*High quality and secure supplies of drinking water.*~~
> - ~~*Good practice nutrient and water management.*~~
> - ~~*Kaitiakitanga is integrated into water management in the Zone.*~~
> - ~~*Healthy lowland streams.*~~
> - ~~*Te Waihora is a healthy ecosystem.*~~
> - ~~*Hill fed waterways support aquatic life and recreation.*~~
> - ~~*Alpine rivers and high country values are protected.*~~
> - ~~*Enhanced Indigenous Biodiversity across the Zone.*~~
>
> *Te Waihora/Lake Ellesmere is a tribal taonga for Ngāi Tahu. It has long been an abundant source of mahinga kai and is also known by the name Te Kete Ika a Rākaihautū, the fish basket of Rākaihautū. The outstanding cultural significance of Te Waihora/Lake Ellesmere is recognised in*

the Ngāi Tahu Claims Settlement Act 1998 and the National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990. Under the Ngāi Tahu Claims Settlement Act 1998, ownership of the lakebed of Te Waihora/Lake Ellesmere was returned to Te Rūnanga o Ngāi Tahu.

Te Waihora/Lake Ellesmere is also recognised as a nationally significant wetland for both wildlife and wildlife viewing. It supports a rich biological environment including native and introduced species. It is regarded as an important recreational resource for New Zealanders. It is used for fishing, kayaking, motor boating, wind surfing, water and jet skiing, duck shooting, picnicking, bird watching and sightseeing.

In the last 20 years, water use, irrigation and intensive land use have increased substantially. Further irrigation development has been consented. Flows in lowland streams and the Selwyn River/Waikirikiri have decreased by 15-20%, there are elevated nitrate concentrations in shallow groundwater and lowland streams, and the health of Te Waihora/Lake Ellesmere has deteriorated.

There is a lag effect in the transport of nitrogen in the groundwater system of 10-30 years so some environmental and cultural health outcomes will continue to decline even with immediate action. Phosphorus from historical land use has accumulated in the lake-bed sediments of Te Waihora/Lake Ellesmere and is released into the lake when wind-induced wave action disturbs the lake sediments. This can give rise to algal blooms that impact on cultural, recreational and amenity values associated with the lake.

The overall vision for Te Waihora/Lake Ellesmere catchment is 'To restore the mauri of Te Waihora while maintaining the prosperous land-based economy and thriving communities.'

Achieving the vision for Te Waihora/Lake Ellesmere and its catchment will require a sustained effort over a long period of time. A package of actions to achieve the vision for the Selwyn Waihora catchment has been identified through a two year collaborative planning process with the Selwyn Waihora Zone Committee. The Selwyn Waihora Zone Implementation Programme Addendum 2013 records the full package of actions to be implemented. This sub-regional section comprises the regulatory actions.

The key resulting actions included in the package are:

- *Consented alpine water introduced to the catchment for additional irrigation development and is also used to replace groundwater takes, enable stream augmentation and/or managed aquifer recharge;*
- *Water allocation limits, to deliver ecological and cultural flows;*
- *New takes in over-allocated water management zones are prohibited and the volume of water allocated is reduced;*
- *Reducing legacy phosphorus in Te Waihora/Lake Ellesmere by 50 percent and improved management of lake-level and opening;*
- *Restricting the agricultural nitrogen load losses from the catchment;*
- *A 50 percent reduction in the catchment phosphorus load;*
- *Requiring all farming activities to operate at good management practice then make further improvements over time in managing nitrogen.*

The package of actions is significant but it will not achieve the catchment vision. Modelling indicates that to achieve the full vision for the lake under current land management techniques would require wholesale changes in land use in the catchment which would not enable people and communities to provide for their economic and social well-being. There is however, potential for further improvement in the management of irrigation and diffuse pollution as innovation continues to develop within the agricultural sector. This will provide the opportunity for continual improvement in the health of Te Waihora/Lake Ellesmere and water bodies in the catchment over time.

This sub-regional section includes policies and rules in addition to those in Sections 4 and 5 of this Plan to support the implementation of the package of actions for the catchment and to sustainably manage water resources to achieve the purpose of the Resource Management Act 1991. It does so within the scope of a regional plan and regional council functions under the Resource Management Act 1991. The objectives and strategic policies in sections 3 and 4 of this Plan in conjunction with the Selwyn Waihora catchment freshwater outcomes in Section 11.6 are the catchments 'freshwater objectives' in accordance with the National Policy Statement: Freshwater Management 2011.

The Selwyn Waihora catchment is not currently achieving all its 'freshwater objectives' and water quality is anticipated to get worse before it gets better as a result of lag effects. The catchment is therefore over-allocated in accordance with the National Policy Statement: Freshwater Management 2011. In accordance with the Council's Staged Implementation Programme this sub-regional section implements Policy A2 and includes limits or targets (section 11.7) and rules (section 11.5) to assist with improving water quality and meet the limits or targets within the rules. This section also sets out the environmental flow regimes and allocation limits for surface and ground water in the catchment (section 11.7.1 and 11.7.2) and the rules (section 11.5) to phase out over-allocation of water in accordance with Policy B6.

9.4 Numerous submitters commented on the Introduction to Section 11 – Selwyn Te Waihora, including Ellesmere Irrigation Society Inc, Central Plains Water, Selwyn DC, Waihora Ellesmere Trust, Fertiliser Association, Federated Farmers, TrustPower, KO Farm Ltd, Nga Rūnanga and Te Rūnanga O Ngāi Tahu, Horticulture NZ, Dairy NZ, Fonterra, The Canterbury Farming Company, Te Taumutu Rūnanga, Ravensdown, and Beef + Lamb NZ. Many requested that the introduction be retained with amendments.

9.5 Nga Rūnanga and Te Rūnanga O Ngāi Tahu, and Te Taumutu Rūnanga requests amendments to the heading and throughout the Section to "Section 11 Selwyn Te Waihora".

9.6 Canterbury Regional Council has a positive relationship with Nga Rūnanga and Te Rūnanga o Ngāi Tahu and Te Taumutu Rūnanga and recognises the role of kaitiaki of Lake Ellesmere/Te Waihora. The requested amendment is discussed more fully in the section of this Report on the Cultural Landscape Values Management Area and is recommended to be adopted throughout Variation 1.

9.7 Nga Rūnanga and Te Rūnanga o Ngāi Tahu also request clarification of their role as kaitiaki in the introduction of Section 11 to read: "*This means that Te Rūnanga o Ngai Tahu are one of*

the largest land owners within the catchment and have dual roles within the catchment, one as Kaitiaki, the other as land owner".

9.8 The submission seeks to clarify the role of Ngāi Tahu in the catchment. The Variation 1 Introduction does state the ownership of the lakebed as it stands. The Introduction does not explain or introduce the Cultural Landscape Values Management Area, and this may be a part of the reason for some of the submissions on other parts of the Variation. In particular, the role of Ngāi Tahu as kaitiaki is not discussed and neither is the values and derivation of the Cultural Landscape Values Management Area. Additional text is recommended to address this issue.

9.9 Selwyn DC seeks to amend Section 11 – Selwyn Te Waihora Page 4-3 paragraph 5 - bullet point 3 to read: *"New takes in over-allocated water management zones, other than related to community water supplies, are prohibited and the volume of water allocation is reduced"*.

9.10 This amendment is consistent with the recommendations with respect to policies and rules in this Report. The requested amendment is also consistent with the pLWRP (decisions version) - Policy 4.49 which reads:

> *4.49 Enable the taking of water for a community drinking-water supply by not requiring compliance with any minimum or residual flow or partial restriction conditions and the environmental flow and allocation regime or groundwater allocation limit provided a water supply strategy is in place and the water supply is so managed as to restrict the use of water from those supplies during periods of low flow or water levels.*

9.11 A number of submitters generally seek greater recognition of the importance of water and agricultural production.

9.12 Selwyn DC also requests an addition to Section 11 – Selwyn Te Waihora Page 4-1 as follows: *"Freshwater is an essential natural resource, having a range of values. Water and the associated infrastructure are essential to provide for economic, social, cultural and environmental wellbeing. Within the Selwyn-Waihora area there are a number of existing towns and communities. The continuing functioning of these areas is important to ensuring the overall social and economic wellbeing of the area. In addition within the area there are a range of primary production and other business activities where their continued operation is important in ensuring the sustainable management of natural and physical resources."*

9.13 The wording that Selwyn DC requests does not improve the understanding of the Variation. The wording is an overall introduction to freshwater management in New Zealand and is not specific to the Selwyn Te Waihora sub-regional area. The Introduction currently provides an executive summary of what Section 11 of the pLWRP addresses. It is recommended that the introduction maintain its relevance to the Selwyn Te Waihora sub-regional area and therefore the Selwyn DC suggestion is not recommended to be added.

9.14 Central Plains Water discusses an imbalance in the identification of benefits from irrigation and the development of the Central Plains Water Scheme and consequently requests a number of amendments to the Introduction to Section 11. Central Plains Water requests the inclusion of the following statement:
"*The Selwyn-Waihora area that is addressed by this section includes a diverse range of farming, industrial and township based activities. The area is of significant economic, social and cultural importance to the wider Canterbury Region and New Zealand."*

9.15 And further amendments reading:
"Irrigation is critical to delivering a wide range of benefits at local, regional and national scales. In the last 20 years, water use, irrigation and intensive land use have increased substantially. Further irrigation development has been consented, and the implementation of this irrigation is anticipated by this section of the plan."

9.16 A number of submitters express concerns regarding effectively identifying the benefits of agriculture in the Selwyn Te Waihora sub-regional area. There is a lack of economic discussion in the Introduction, and therefore the inclusion of further discussion of economic benefits resulting from agricultural production is recommended. The above amendments from the Central Plains Water submission are appropriate additions. The final phrase of these additions may need to be reconsidered, depending on other decisions made.

9.17 Other amendments requested by Central Plains Water do not add to the understanding of the Selwyn Te Waihora sub-regional section and therefore are not recommended to be included in the Section 11 Introduction. The amendments are minor in nature and have not been specifically analysed.

9.18 In addition to the amendments suggested by Central Plains Water, Horticulture NZ also requests additional wording pertaining to the economic importance of agriculture in Selwyn Te Waihora. The wording Horticulture NZ seeks is as follows:
"*Selwyn-Waihora is an important area for agriculture and food production which provides significant employment in the area, both on-farm and in processing and service industries. The social and economic wellbeing of the community is reliant on the agricultural industry and it is important that it is retained so that the communities can thrive."*

9.19 The paragraph requested by Horticulture NZ provides an introduction to the significance of agriculture in the Selwyn Te Waihora sub-regional area and is consistent with Section 5 of the RMA. It is recommended that this paragraph be added to the Section 11 Introduction.

9.20 Fonterra and Dairy NZ also seek additional text in the Introduction; this was supported by a number of further submissions from Horticulture NZ, TrustPower, and ANZCO & CMP. However, their wording requests are less consistent with the outcomes and strategies of the pLWRP or the policy position of the Variation, and are in large part covered by the wording requests from Central Plains Water and Horticulture NZ.

9.21 Waihora Ellesmere Trust seeks to amend the Introduction refer to Lake Ellesmere/Te Waihora as being internationally significant, rather than nationally significant. It is noted that Lake Ellesmere/Te Waihora is not one of the six New Zealand internationally significant wetlands identified through the Ramsar Convention on Wetlands. However, it would appear to meet the criteria for listing. On this basis, the wording is recommended to change to "internationally significant".

9.22 Ellesmere Irrigation Society Inc seeks to amend the sixth bullet point on p4-3 as follows: "A 50 percent reduction in the catchment phosphorus load." Submitters such as Ravensdown also commented on reviewing the phosphorus reduction. Irrigation NZ also seeks to amend the ZIP Addendum key resulting actions.

9.23 The 50 percent phosphorus reduction is not included in a policy position or rule framework. The bullet points addressed in the Section 11 Introduction are key resulting actions which are a distillation of the goals, pathways and outcomes of the ZIP Addendum. The Zip Addendum goals, pathways and outcomes are discussed elsewhere in this Report. The policies and rules in Variation 1 support the implementation of the key resulting actions but do not achieve the actions of itself. Because the ZIP Addendum sets out a cohesive package of regulatory and non-regulatory actions to enable the Zone Committee's vision, it is important that these key resulting actions be retained and are not altered by Variation 1.

9.24 Some submitters, including the Waihora Ellesmere Trust and Beef + Lamb NZ, seek amendments to the key resulting actions because the catchment vision is not expected to be met by the proposed key resulting actions. Specific decisions are not requested therefore no amendments are suggested here. However, the potential for disjoint between the outcomes, policies and rules and full package of actions is noted and discussed further in this Report.

9.25 Beef + Lamb NZ request more flexibility in the Introduction. However, it is unclear from the submission how that should be achieved. The Introduction, as discussed, is an explanation of the Selwyn Te Waihora sub-region and does not directly affect the implementation of the policies and rules contained in the section.

9.26 KO Farm Company Limited seeks to amend the introductory text to Section 11 and associated policies, to fully identify all potential issues associated with the proposed nutrient management regime, including the social and economic issues that may be associated with achieving the vision for Te Waihora/Lake Ellesmere including:

(i) potential impacts on farm viability/profitability;
(ii) social and economic consequences of any failure to obtain resource consents that may be necessary to continue an existing farming operation;
(iii) lack of opportunities to undertake new land use options for landholdings; and
(iv) impact on value of existing landholdings.

9.27 Many of these matters may be better expressed in the Section 32 Report, rather than the introductory text. The submitter is invited to further explain at the hearing the actual text changes sought.

9.28 TrustPower notes that the Little Rakaia allocation limits and rules may conflict with the National Water Conservation Order (Rakaia River) Order 1988. TrustPower also submit that the National Water Conservation Order (Rakaia River) Order 1998 is incorrectly identified.

9.29 The first issue is addressed elsewhere in this Section 42A Report and no change is recommended for the Introduction. The second amendment requested by TrustPower is not consistent with the New Zealand Legislation website. However, a minor correction is required to the reference, as the date on the New Zealand Legislation Website is 1988. If the submitter has any other information as to the correct title of the Order, this would be welcomed at the hearing.

Recommendation R 11 Introduction

Amend Section 11 – Introduction as follows:

Section 11 - Selwyn Te Waihora
The area covered by this section is shown on the map below. It includes the foothills catchment of the Waikirikiri/Selwyn River and its tributaries, the plains between the Waimakariri and Rakaia Rivers, the Halswell River/Huritini, and a number of other lowland streams and ephemeral waterways of Banks Peninsula that flow into Te Waihora/Lake Ellesmere. This section does not set flow and allocation regimes for the Rakaia and Waimakariri Rivers. These are contained in the National Water Conservation Order (Rakaia River) Order ~~1998~~1988 and the Waimakariri River Regional Plan.

[map]

Te Waihora/Lake Ellesmere is a tribal taonga for Ngāi Tahu. It has long been an abundant source of mahinga kai and is also known by the name Te Kete Ika a Rākaihautū, the fish basket of Rākaihautū. The outstanding cultural significance of Te Waihora/Lake Ellesmere is recognised in the Ngāi Tahu Claims Settlement Act 1998 and the National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990. Under the Ngāi Tahu Claims Settlement Act 1998, ownership of the lakebed of Te Waihora/Lake Ellesmere was returned to Te Rūnanga o Ngāi Tahu.

This Section of the Plan gives priority to the outstanding values of the lake and recognises the sensitivity of Te Waihora as a receiving environment, by enabling the careful management of activities that have a direct influence on lake health and the relationship of Ngāi Tahu with the lake. This enables Ngāi Tahu to more effectively exercise kaitiakitanga with regard to Te Waihora.[118]

[118] V1pLWRP-363 – Nga Rūnanga and Te Rūnanga O Ngāi Tahu

Te Waihora/Lake Ellesmere is also recognised as a~~n~~ internationally[119] *~~nationally~~ significant wetland for both wildlife and wildlife viewing. It supports a rich biological environment including native and introduced species. It is regarded as an important recreational resource for New Zealanders. It is used for fishing, kayaking, motor boating, wind surfing, water and jet skiing, duck shooting, picnicking, bird watching and sightseeing.*

The Selwyn-Waihora area that is addressed by this section includes a diverse range of farming, industrial and township based activities. The area is of significant economic, social and cultural importance to the wider Canterbury Region and New Zealand.[120]

Irrigation is critical to delivering a wide range of benefits at local, regional and national scales. In the last 20 years, water use, irrigation and intensive land use have increased substantially. Further irrigation development has been consented, and the implementation of this irrigation is anticipated by this section of the plan.[121]

Selwyn Te Waihora is an important area for agriculture and food production which provides significant employment in the area, both on-farm and in processing and service industries. The social and economic wellbeing of the community is reliant on the agricultural industry and it is important that it is retained so that the communities can thrive.[122]

Flows in lowland streams and the Selwyn River/Waikirikiri have decreased by 15-20%, there are elevated nitrate concentrations in shallow groundwater and lowland streams, and the health of Te Waihora/Lake Ellesmere has deteriorated.

There is a lag effect in the transport of nitrogen in the groundwater system of 10-30 years so some environmental and cultural health outcomes will continue to decline even with immediate action. Phosphorus from historical land use has accumulated in the lake-bed sediments of Te Waihora/Lake Ellesmere and is released into the lake when wind-induced wave action disturbs the lake sediments. This can give rise to algal blooms that impact on cultural, recreational and amenity values associated with the lake.

The overall vision for Te Waihora/Lake Ellesmere catchment is 'To restore the mauri of Te Waihora while maintaining the prosperous land-based economy and thriving communities.'

Achieving the vision for Te Waihora/Lake Ellesmere and its catchment will require a sustained effort over a long period of time. A package of actions to achieve the vision for the Selwyn Waihora catchment has been identified through a two year collaborative planning process with the Selwyn Waihora Zone Committee. The Selwyn Waihora Zone Implementation Programme Addendum 2013 records the full package of actions to be implemented. This sub-regional section comprises the regulatory actions.

The key resulting actions included in the package are:

- *Consented alpine water introduced to the catchment for additional irrigation development and is also used to replace groundwater takes, enable stream augmentation and/or managed aquifer recharge;*

[119] V1pLWRP-323 - Waihora Ellesmere Trust
[120] V1pLWRP-345 – Central Plains Water
[121] V1pLWRP-345 – Central Plains Water
[122] V1pLWRP-1383 - Horticulture NZ

- *Water allocation limits, to deliver ecological and cultural flows;*
- *New takes in over-allocated water management zones, other than related to community water supplies,*[123] *are prohibited and the volume of water allocated is reduced;*
- *Reducing legacy phosphorus in Te Waihora/Lake Ellesmere by 50 percent and improved management of lake-level and opening;*
- *Restricting the agricultural nitrogen load losses from the catchment;*
- *A 50 percent reduction in the catchment phosphorus load;*
- *Requiring all farming activities to operate at good management practice then make further improvements over time in managing nitrogen.*

The package of actions is significant but it will not achieve the catchment vision. Modelling indicates that to achieve the full vision for the lake under current land management techniques would require wholesale changes in land use in the catchment which would not enable people and communities to provide for their economic and social well-being. There is however, potential for further improvement in the management of irrigation and diffuse pollution as innovation continues to develop within the agricultural sector. This will provide the opportunity for continual improvement in the health of Te Waihora/Lake Ellesmere and water bodies in the catchment over time.

This sub-regional section includes policies and rules in addition to those in Sections 4 and 5 of this Plan to support the implementation of the package of actions for the catchment and to sustainably manage water resources to achieve the purpose of the Resource Management Act 1991. It does so within the scope of a regional plan and regional council functions under the Resource Management Act 1991. The objectives and strategic policies in sections 3 and 4 of this Plan in conjunction with the Selwyn Te Waihora catchment freshwater outcomes in Section 11.6 are the catchment's 'freshwater objectives' in accordance with the National Policy Statement: Freshwater Management 2011.

The Selwyn Te Waihora catchment is not currently achieving all its 'freshwater objectives' and water quality is anticipated to get worse before it gets better as a result of lag effects. The catchment is therefore over-allocated in accordance with the National Policy Statement: Freshwater Management 2011. In accordance with the Council's Staged Implementation Programme this sub-regional section implements Policy A2 and includes limits or targets (section 11.7) and rules (section 11.5) to assist with improving water quality and meet the limits or targets within the rules. This section also sets out the environmental flow regimes and allocation limits for surface and ground water in the catchment (section 11.7.1 and 11.7.2) and the rules (section 11.5) to phase out over-allocation of water in accordance with Policy B6.

Section 11.1

9.30 No submissions were received on Section 11.1 and accordingly is it recommended that it be retained without amendment.

Recommendation R 11.1

That Section 11.1 be retained without amendment.

[123] V1pLWRP-514 - Selwyn DC

Section 11.2

9.31 The following text is an amendment to Section 11.2 of the pLWRP and reads:

> *11.2 Water Conservation Orders that apply to the Selwyn - Waihora Sub-regional area*
> *~~Lake Ellesmere (Te Waihora) Water Conservation Order, 1990.~~*
> *National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990*
> *National Water Conservation (Rakaia River) Order 1998*

9.32 One submission was received on Section 11.2. TrustPower noted a minor correction as follows "National Water Conservation (Rakaia River) Amendment Order ~~1998~~ 2013." The amendments requested by TrustPower are not consistent with the New Zealand Legislation website, where the 2013 amendments are incorporated into the original Order. However, a minor correction is required as the date on the New Zealand Legislation Website is 1988. Consequential amendments have also been made to Section 11 Introduction.

Recommendation R 11.2

That Section 11.2 be amended as follows:

> *11.2 Water Conservation Orders that apply to the Selwyn - Waihora Sub-regional area*
> *~~Lake Ellesmere (Te Waihora) Water Conservation Order, 1990.~~*
> *National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990*
> *National Water Conservation (Rakaia River) Order 19~~9~~88.*[124]

Section 11.3

9.33 The following text is an amendment to Section 11.3 of the pLWRP and reads:

> *11.3 Iwi Management Plans that apply to the Selwyn - Waihora Sub-regional area*
> *Mahaanui Iwi Management Plan 2013*
> *Te Waihora Joint Management Plan (Mahere Tukutahi o Te Waihora) 2005*
> *Te Rūnanga o Ngāi Tahu Freshwater Policy Statement 1999.*

9.34 Section 11.3 received one submission - Te Taumutu Rūnanga submitted in support.

Recommendation R 11.3 Introduction

That Section 11.3 be retained without amendment.

[124] Cl 16 – Minor correction

Further Amendments Requested

9.35 A number of submitters including Federated Farmers, Horticulture NZ, Beef + Lamb NZ and Nga Rūnanga and Te Rūnanga o Ngāi Tahu requested a new objective.

9.36 Horticulture NZ requested the addition of a new objective to recognise and provide for the nationally significant benefits of food and fibre production and their contribution to economic, social and cultural wellbeing, as relying on the framework of the pLWRP does not adequately identify the values of the Selwyn Te Waihora sub-regional area.

9.37 Federated Farmers support the Zone Committee's long term goal for the catchment but opposes the absence of an objective for the catchment. Federated Farmers states that an objective is required to give statutory status to the catchment vision and to provide justification for the policies and rules in the section. Federated Farmers requests the following wording:

"The mauri of Te Waihora and its tributaries is restored while maintaining a prosperous land-based economy and thriving communities in the Selwyn Te Waihora Catchment".

9.38 Nga Rūnanga and Te Rūnanga o Ngāi Tahu and Beef + Lamb NZ request the same wording as Federated Farmers.

9.39 A number of further submissions were received regarding the inclusion of the above objective. Nga Rūnanga and Te Rūnanga O Ngāi Tahu's submission point received six further submissions. Three were received in support including Horticulture NZ and Fonterra; and three in opposition including Forest and Bird and TrustPower. Similar further submissions were received on Federated Farmers and Beef + Lambs submission points.

9.40 While an objective may give greater emphasis to the specific outcomes for this sub-regional area, the structure of the pLWRP has been deliberately set up to rely on the region-wide objectives and strategic policies. This is clearly stated in Policy 4.10:

> *4.10 Reviews of sub-regional sections will not make any changes to the Objectives or Policies 4.1-4.10 of this Plan, except that catchment-specific outcomes and limits may be developed to implement the objectives and policies of this Plan*

9.41 On this basis, no additional objective, specific to this sub-regional section of the pLWRP is recommended. It may be an option to consider the wording as the basis for a policy, such as: "*To restore the mauri of Te Waihora and its tributaries, while maintaining a prosperous land-based economy and thriving communities in the Selwyn Te Waihora Catchment".* However, it is debateable whether this will add appreciable value over the existing, more detailed, policies.

10 Outcomes

10.1 The pLWRP sets a framework of establishing outcomes for water bodies within a sub-regional zone, if the region-wide outcomes are in need of alteration for location-specific values.

10.2 This broadly follows the National Policy Statement for Freshwater Management (NPSFM[125]), the Regional Policy Statement (RPS) and objectives and strategic policies of the pLWRP. The relevant extracts from the NPSFM, RPS and pLWRP are set out below:

Relevant NPSFM Policy

Policy A1 *By every regional council making or changing regional plans to the extent needed to ensure the plans:*

a. establish freshwater objectives and set freshwater quality limits for all bodies of fresh water in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:

i. the reasonably foreseeable impacts of climate change

ii. the connection between water bodies

b. establish methods (including rules) to avoid over-allocation.

Relevant RPS Objective

Objective 7.2.1 *Sustainable management of fresh water*

The region's fresh water resources are sustainably managed to enable people and communities to provide for their economic and social wellbeing through abstracting and/or using water for irrigation, hydro-electricity generation and other economic activities, and for recreational and amenity values, and any economic and social activities associated with those values, providing:

(1) the life-supporting capacity ecosystem processes, and indigenous species and their associated freshwater ecosystems and mauri of the fresh water is safe-guarded;

(2) the natural character values of wetlands, lakes and rivers and their margins are preserved and these areas are protected from inappropriate subdivision, use and development and where appropriate restored or enhanced; and

(3) any actual or reasonably foreseeable requirements for community and stockwater supplies and customary uses, are provided for.

Relevant pLWRP Objectives and Policies

3.8 The quality and quantity of water in fresh water bodies and their catchments is managed to safeguard the life-supporting capacity of ecosystems and ecosystem processes, including ensuring sufficient flow and quality of water to support the habitat and feeding, breeding,

[125] While the NPSFM was updated in July 2014, during the writing of this Report, the 2011 objectives and policies are listed here. Refer to the reporting assumptions in Section 8 for greater detail.

migratory and other behavioural requirements of indigenous species, nesting birds and, where appropriate, trout and salmon.

3.12 When setting and managing within limits, regard is had to community outcomes for water quality and quantity.

3.16 Freshwater bodies and their catchments are maintained in a healthy state, including through hydrological and geomorphic processes such as flushing and opening hāpua and river mouths, flushing algal and weed growth, and transporting sediment.

4.1 Lakes, rivers, wetlands and aquifers will meet the fresh water outcomes set in Sections 6 to 15 within the specified timeframes. If outcomes have not been established for a catchment, then each type of lake, river or aquifer should meet the outcomes set out in Table 1 by 2030.

10.3 Following the relevant objectives and policies above, the Zone Committee, informed by science, and cultural, social and economic assessments revised the region-wide outcome tables to apply to the Selwyn Te Waihora sub-regional area. While full replacement tables are included in Variation 1, the content of the tables is only modestly different to the region-wide tables.

Policy 11.4.1

10.4 Policy 11.4.1 reads:

11.4.1 Manage water abstraction and discharges of contaminants within the entire Selwyn Waihora catchment to avoid cumulative effects on the water quality of Te Waihora/Lake Ellesmere and flow of water in springs and tributaries flowing into Te Waihora/Lake Ellesmere.

10.5 Policy 11.4.1 attracted a number of submissions. Some seek to retain the policy in full including Te Taumutu Rūnanga, Christchurch City Council and Ravensdown. Numerous submitters request amendments.

10.6 The Director General of Conservation seeks to amend Policy 11.4.1 to read:
"*Manage water abstraction and discharges of contaminants within the entire Selwyn-Waihora catchment to avoid adverse cumulative effects on the water quality of Te Waihora/Lake Ellesmere, <u>streams and shallow groundwater;</u> and flow of water in springs and tributaries flowing into Te Waihora/Lake Ellesmere.*"

10.7 Central Plains Water and the Fertiliser Association seek to amend the policy to read: "*…Selwyn-Waihora catchment to avoid<u>, remedy or mitigate</u> cumulative effects on the water quality…*". Others, such as Selwyn DC, seek similar amendments: "*…Selwyn-Waihora catchment to manage<u>, and if practicable</u> avoid, <u>adverse</u> cumulative effects on the water quality…*".

10.8 Synlait Farms and Synlait Milk seek to include "*adverse cumulative effects*". Dairy NZ and Fonterra seek amendments to "*avoid significant cumulative adverse effects*".

10.9 Fish and Game and Forest and Bird seek to amend 11.4.1 to read:
"*Manage water abstraction and discharges of contaminants within the entire Selwyn Waihora catchment to avoid cumulative effects on both the water quality of Te Waihora/Lake Ellesmere and the flow and quality of water in springs and tributaries flowing into Te Waihora/Lake Ellesmere*".

10.10 Policy 11.4.1 is an overall policy that identifies the purpose of managing extraction of water and discharges of contaminants within the Selwyn Te Waihora sub-regional area. It sits alongside the objectives and strategic policies of the pLWRP.

10.11 A small number of submitters have sought relatively minor adjustments to this policy, in order to improve its wording, clarify its implications and, in some cases, make the wording somewhat less direct.

10.12 A number of the submission points are helpful, in terms of focusing the attention on adverse cumulative effects; acknowledging that, in the context of the Selwyn Te Waihora catchment, some effects are remedied or mitigated, as well as avoided (often through non-regulatory means); and making improvements to the clarity of the application of the policy.

Recommendation R 11.4.1

Amend Policy 11.4.1 to read:

> *11.4.1 Manage water abstraction and discharges of contaminants within the entire Selwyn Te Waihora catchment to avoid, remedy or mitigate*[126] *adverse*[127] *cumulative effects on the water quality of Te Waihora/Lake Ellesmere, streams and shallow groundwater;*[128] *and flow of water in springs and tributaries flowing into Te Waihora/Lake Ellesmere.*

[126] V1pLWRP-354 - Central Plains Water
[127] V1pLWRP-974 & V1pLWRP-1971 – Synlait Farms & Synlait Milk
[128] V1pLWRP-198 - Director General of Conservation

Table 11(a)

10.13 Table 11(a) states:

The following tables set out the freshwater outcomes to be achieved in the Selwyn Waihora catchment.

Table 11(a): Freshwater Outcomes for Selwyn Waihora Catchment Rivers

Management Unit (see Planning Maps)	*River*	*Ecological health indicators*			*Macrophyte indicators*		*Periphyton indicators*		*Siltation indicator*	*Microbiological indicator*	*Cultural indicator (10)*
		QMCI [min score]	*Dissolved oxygen [min saturation] (%)*	*Temperature*	*Emergent macrophytes [max cover of bed] (%)*	*Total macrophytes [max cover of bed] (%)*	*Chlorophyll a [max biomass] (mg/m³)*	*Filamentous algae >20mm [max cover of bed] (%)*	*Fine sediment <2 mm diameter [max cover of bed] (%)*	*Suitability for contact recreation [SFRG](9)*	
Natural state	*Headwaters of Selwyn/Waikiriri*	*Rivers are maintained in a natural state*									*Freshwater mahinga kai specie are sufficiently abundant for customary gathering, water quality is suitable for their safe harvesting, and they are safe to eat.*
Alpine - upland	*Headwaters of Selwyn/Waikiriri*	*>6*	*90*	*20*	*No values set*	*No values set*	*50*	*10*	*10*	*Good to fair*	
Hill-fed - upland	*Upper Selwyn/Waikirikiri* *Hawkins*	*>6(1)*	*90*	*20*	*No values set*	*No values set*	*50*	*10*	*15*	*Good*	
Hill-fed - lowland	*Hawkins* *Hororata* *Selwyn/Waikirikiri* *Waiāniwaniwa*	*>5(2)*	*90*	*20*	*No values set*	*No values set*	*200(6)*	*<30(6)*	*15*	*Good to fair*	
Banks Peninsula	*Kaituna* *Price Stream*	*>5(3)* *>6(4)*	*90*	*20*	*No values set*	*No values set*	*120*	*20*	*20*	*No values set*	
Spring-fed - plains	*Birdlings Brook* *Boggy Creek* *Doyleston Drain* *Halswell/Huritini* *Hanmer Road Drain* *Harts Creek* *Hororata* *Irwell River* *Jollies Brook* *Knights Creek* *Lee*	*>5(5)*	*70*	*20*	*30*	*50*	*No values set*	*<30(7)* *<20(8)*	*20*	*No values set*	

	LII *Lower Selwyn/Waikirikiri* *Silverstream* *Snake Creek* *Taumutu Creek* *Tent Burn Stream* *Waikekewaia Creek; and other lowland spring-fed streams.*										
All Rivers	*-*	*Observed minimum river flows of 80 to 90% of the naturalised 7DMALF on average*									

Key:
QMCI = Quantitative macro invertebrate community index
SFRG = Suitability for Recreation Grade from Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas 2003
7DMALF = Seven day Mean Annual Low Flow
(1) Selwyn River/Waikirikiri upstream of Whitecliffs
(2) Over a 5 year period: 80 percent of samples for the Selwyn River/Waikirikiri and Hawkins River; and 60 percent of samples for the Waiāniwaniwa River
(3) QMCI ≥ 5 for (1) Kaituna River from Kaituna to Te Waihora/Lake Ellesmere confluence and (2) Prices Stream from 2.5 km upstream of SH75 to Te Waihora/Lake Ellesmere confluence
(4) QMCI ≥ 6 for (1) Kaituna River all reaches upstream of Kaituna (2) Prices Stream all reaches upstream from a point 2.5 km upstream of SH75
(5) 80 percent of samples over a 5 year period
(6) 80 percent of samples over a 5 year period
(7) Over a 5 year period: 95 percent of samples for Boggy Creek and the Selwyn River/Waikirikiri at Coes Ford; 90 percent of samples for Doyleston Drain; and 80 percent of samples for Waikekewai Creek and Irwell River
(8) Halswell River, Harts Creek and Hanmer Road Drain
(9) SFRG outcomes for Selwyn River / Waikirikiri contact recreation sites: Glentunnel (Fair); Chamberlains Ford (Good); Coes Ford (Fair); Upper Huts (Fair).
(10) Outcomes relate to the part of any river that passes through the Cultural Landscape/Values Management Area in Table 11(n)

10.14 Selwyn DC seeks to amend the introductory sentence to the tables to read:
"*The following tables set out the fresh water outcomes to be achieved in the Selwyn-Waihora catchment. The achievement of these outcomes will be through a combination of implementation of this Plan along with the implementation of the recommendations of the Selwyn-Waihora Zone Implementation Plan. A number of the outcomes are aspirational and will only result through improvements to the current water quality being made over time and will likely take beyond the life of this plan to achieve.*"

10.15 The Selwyn DC request for clarification of the application of the table and achievement of the outcomes is helpful, in linking the outcomes to both regulatory and non-regulatory programmes. As has been discussed in the Zone Committee section of this Section 42A Report, without the non-regulatory actions occurring, these outcomes are not likely to be met.

10.16 The tables are uncertain as to the timeframe by which the outcomes need to be achieved. The general framework in Policy 4.1 is to achieve the outcomes in the tables by 2030. However, for Selwyn Te Waihora, the timeframes are considerably longer, largely due to the "lag" effect of nutrients gradually working their way into lowland water bodies. This is estimated to be in the order of 30 years, so meeting the outcomes is likely to take around 30 years longer than the timeframe by which the regulatory and non-regulatory actions are in place. On this basis, stating a timeframe is potentially unhelpful, but would likely need to be at least 2065.

10.17 Selwyn DC, B & A Moir, J Greenslade and D Hasson seek to delete the siltation indicator for fine sediment from Table 11(a). Alternatively some of the submitters seek to exclude the application of this indicator to water bodies used for land drainage activities and on water bodies where the deposition of sediment at the mouths of rivers is a natural process; and others seek to exclude the application of this indicator for rivers that are part of the designated land drainage network.

10.18 Canterbury District Health Board seeks to amend Table 11(a) to include, under periphyton indicators, values for cyanobacteria mat cover at values which are equivalent of or better quality than in the pLWRP. Canterbury District Health Board also seeks to amend Table 11(a) and replace statement "no set value" under microbiological indicator with "good/fair" or "improvement on current status". From the context of the submission this request relates to the contact recreation values.

10.19 Though cyanobacteria was not specifically modelled as part of developing Variation 1, for consistency with the suite of region-wide outcomes and indicators, it is appropriate that the region-wide numerical values for cyanobacteria mat cover in pLWRP Table 1a should be added to Table 11(a). This indicator was omitted in error.

10.20 At this stage it is not recommended to amend Table 11(a) to replace "no value set" with a "good to fair" for the suitability for recreation grade (SFRG) for Banks Peninsula and Spring-

fed plains streams. This is due the lack of known recreational sites for swimming on these rivers.

10.21 Fonterra and Dairy NZ seek to amend Table 11(a) to correct errors in the table relating to differing QMCI outcomes for some of the streams as indicated by the footnotes.

10.22 Ellesmere Irrigation Society Inc seeks to delete Table 11(a) entirely; in particular the submitter seeks the removal of Doyleston Drain, Hanmer Road Drain and reference to "other lowland spring-fed streams".

10.23 A number of submitters, including Fish and Game and Horticulture NZ challenge the science behind the tables and request review, updates or more time for comment.

10.24 Overall, the tables are very similar to the region-wide tables in Section 4 of the pLWRP. Key differences are outlined in the Section 32 Report.

10.25 Some submitters have sought adjustments by including or removing some particular water bodies from Table 11(a). These were considered in some detail by the Zone Committee at the time of preparing the outcome tables. Unless there is clarity from the submitters as to precisely why the water bodies should be removed from the table, the recommendation is to maintain the tables in their present state.

10.26 A number of submitters have made general statements about these tables, and about all tables in the Variation, to the effect that they seek more time for review, seek corrections and alterations or improved science. In a general sense these submitters do not specify what particular changes they seek. However, they generally reserve the right to present this at the hearing. On this basis, no recommendation can be made other than, at this point in time, to maintain the existing as notified tables.

Recommendation R Table 11(a)

Amend the introductory sentence as follows:

> *The following tables set out the fresh water outcomes to be achieved in the Selwyn-Waihora catchment. The achievement of these outcomes will be through a combination of the implementation of this Plan along with the implementation of the recommendations of the Selwyn-Waihora Zone Implementation Programme and will likely take beyond the life of this plan to achieve.*[129]

Amend Table 11(a) as follows:

Table 11(a)

10.27 Table 11(a) states:

> *The following tables set out the freshwater outcomes to be achieved in the Selwyn Waihora catchment.*
>
> *Table 11(a): Freshwater Outcomes for Selwyn Waihora Catchment Rivers*

Management Unit (see Planning Maps)	*River*	*Ecological health indicators*			*Macrophyte indicators*		*Periphyton indicators*			*Siltation indicator*	*Microbiological indicator*	*Cultural indicator (10)*
		QMCI [min score]	*Dissolved oxygen [min saturation] (%)*	*Temperature*	*Emergent macrophytes [max cover of bed] (%)*	*Total macrophytes [max cover of bed] (%)*	*Chlorophyll a [max biomass] (mg/m³)*	*Filamentous algae >20mm [max cover of bed] (%)*	*Cyanobacteria mat cover (%)*[130]	*Fine sediment <2 mm diameter [max cover of bed] (%)*	*Suitability for contact recreation [SFRG](9)*	
Natural state	*Headwaters of Selwyn/Waikiriri*	*Rivers are maintained in a natural state*										*Freshwater mahinga kai specie are sufficiently abundant for*
Alpine - upland	*Headwaters of Selwyn/Waikiriri*	*>6*	*90*	*20*	*No values set*	*No values set*	*50*	*10*	*20*	*10*	*Good to fair*	
Hill-fed -	*Upper Selwyn/Waikirikiri*	*>6(1)*	*90*	*20*	*No values set*	*No values set*	*50*	*10*	*20*	*15*	*Good*	

[129] V1pLWRP-536-Selwyn DC
[130] V1pLWRP-1245-Canterbury District Health Board

upland	*Hawkins*											*customary gathering, water quality is suitable for their safe harvesting, and they are safe to eat.*
Hill-fed - lowland	*Hawkins* *Hororata* *Selwyn/Waikirikiri* *Waiāniwaniwa*	*>5(2)*	*90*	*20*	*No values set*	*No values set*	*200(6)*	*<30(6)*	*50*	*15*	*Good to fair*	
Banks Peninsula	*Kaituna* *Price Stream*	*>5(3)* *>6(4)*	*90*	*20*	*No values set*	*No values set*	*120*	*20*	*30*	*20*	*No values set*	
Spring-fed - plains	*Birdlings Brook* *Boggy Creek* *Doyleston Drain* *Halswell/Huritini* *Hanmer Road Drain* *Harts Creek* *Hororata* *Irwell River* *Jollies Brook* *Knights Creek* *Lee* *LII* *Lower Selwyn/Waikirikiri* *Silverstream* *Snake Creek* *Taumutu Creek* *Tent Burn Stream* *Waikekewaia Creek; and other lowland spring-fed streams.*	*>5(5)*	*70*	*20*	*30*	*50*	*No values set*	*<30(7)* *<20(8)*	*50*	*20*	*No values set*	
All Rivers	*-*	*Observed minimum river flows of 80 to 90% of the naturalised 7DMALF on average*										

Key:

QMCI = Quantitative macro invertebrate community index

SFRG = Suitability for Recreation Grade from Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas 2003

7DMALF = Seven day Mean Annual Low Flow

(1) Selwyn River/Waikirikiri upstream of Whitecliffs

(2) Over a 5 year period: 80 percent of samples for the Selwyn River/Waikirikiri and Hawkins River; and 60 percent of samples for the Waiāniwaniwa River

(3) QMCI ≥ 5 for (1) Kaituna River from Kaituna to Te Waihora/Lake Ellesmere confluence and (2) Prices Stream from 2.5 km upstream of SH75 to Te Waihora/Lake Ellesmere confluence

(4) QMCI ≥ 6 for (1) Kaituna River all reaches upstream of Kaituna (2) Prices Stream all reaches upstream from a point 2.5 km upstream of SH75

(5) 80 percent of samples over a 5 year period

(6) 80 percent of samples over a 5 year period

(7) Over a 5 year period: 95 percent of samples for Boggy Creek and the Selwyn River/Waikirikiri at Coes Ford; 90 percent of samples for Doyleston Drain; and 80 percent of samples for Waikekewai Creek and Irwell River

(8) Halswell River, Harts Creek and Hanmer Road Drain

(9) SFRG outcomes for Selwyn River / Waikirikiri contact recreation sites: Glentunnel (Fair); Chamberlains Ford (Good); Coes Ford (Fair); Upper Huts (Fair).

(10) Outcomes relate to the part of any river that passes through the Cultural Landscape/Values Management Area in Table 11(n)

Table 11(b)

10.28 Table 11(b) states:

Table 11(b): Freshwater Outcomes for Selwyn Waihora Catchment Lakes

Management unit (see Planning maps)	*Lake*	*Ecological health indicators*				*Eutrophication indicator*	*Visual quality indicator*	*Microbiological indicator*	*Cultural indicator*
		Dissolved Oxygen [min] (%)		*Temp [max] (ºC)*	*Lake SPI [min grade]*	*Trophic Level Index (TLI)(1) [maximum annual average]*	*Water clarity*	*Suitability for contact recreation [SFRG]*	
		Hypo-limnion	*Epilimnion*						
Coastal Lakes	*Te Waihora / Lake Ellesmere*	*70*	*90*	*19 (Mid lake)*	*Moderate*	*6.6 (Mid lake) 6.0 (Lake margins) (2)*	*Clarity is greater in the lake margins are than mid lake areas*	*Good - Fair(3)*	*Freshwater mahinga kai species sufficiently abundant for customary gathering, water quality is suitable for their safe harvesting, and they are safe to eat.*
	Muriwai/ Coopers Lagoon	*70*	*90*	*19*	*Moderate*	*4.0*	*No value set*	*No value set*	

Key:

Lake SPI = Lake Submerged Plant Indicators from Clayton J, Edwards T, (2002) Lake SPI: a method for monitoring Ecological condition in New Zealand lakes (Technical report version 1 Report by NIWA).

TLI =Trophic Level Index from: Protocol for Monitoring Trophic Levels of New Zealand Lakes and Reservoirs (Report by Lakes Consulting, March 2000) provides a pragmatic and widely used numeric scale for measuring the trophic status of New Zealand lakes. The scale is from less than 1 (very low nutrients) to more than 7 (very high nutrients).

SFRG = Suitability for Recreation Grade from: Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas, Ministry for the Environment, June 2003.

Clarity = Measured using SHMAK tube method.

(1) TLI assumed to be calculated as TLI3 (using TP, TN and chl a).

(2) The TLI of 6.0 at the lake margins reflects the desired outcome where water clarity is improved compared to the mid-lake areas as a result of wave-break created by macrophyte re-establishment.

(3) SFRG outcomes for Te Waihora/Lake Ellesmere contact recreation sites: Te Waihora/ Lake Ellesmere Domain (Good).

10.29 A small number of submissions were received on Table 11(b). Some submissions were repeated from other tables challenging the science behind the tables and request review, updates or more time for comment.

10.30 As for Table 11(a), Canterbury District Health Board seeks to amend Table 11(b) and replace the statement "no set value" under the microbiological indicator with "good/fair" or "improvement on current status."

10.31 Dairy NZ and Fonterra seek the inclusion of a new method in Variation 1 committing the Council to monitor and review the effectiveness of the outcomes in Table 11(b).[131]

10.32 Ellesmere Irrigation Society seeks to amend Table 11(b):

- Delete reference to Muriwai/Coopers Lagoon.
- Amend levels relating to Lake Ellesmere/Te Waihora to reflect more achievable levels within the lifetime of this plan.

10.33 As stated above, the tables are very similar to the region-wide tables in Section 4 of the pLWRP. Key differences are outlined in the Section 32 Report.

10.34 Some submitters have sought adjustments by including or removing some particular water bodies from Table 11(a). These were considered in some detail by the Zone Committee at the time of preparing the outcome tables. Unless there is clarity from the submitters as to precisely why the water bodies should be removed from the table, the recommendation is to maintain the tables in their present state.

Recommendation R Table 11(b)

Retain Table 11(b) without amendment

[131] The requests for reviews in relation to policies, rules and tables generally are discussed in relation to nutrient management in this Report.

11 Nutrient Management, Sediment and Microbial Contaminants

Introduction

11.1 The nutrient management, sediment and microbial contaminants provisions in Section 11 are the most substantial component of Variation 1. They have also attracted the largest number of submissions. Many submitters only submit on these provisions, and all policies, rules, definitions and tables have been submitted on, both in support and in opposition.

11.2 There are also a number of submissions that seek changes or discuss issues with the Variation that are broadly related to nutrient management, but often do not specify the exact changes that are requested, or specify only changes with respect to a limited number of the relevant provisions.

11.3 The structure of the analysis of submissions in this section of the Section 42A Report is also a little different to the remaining sections. As there are a number of policies, rules and tables that relate to nutrient management, and set different regimes over the coming decade or so, the submissions have raised a number of consistent themes which apply to all policies, rules and tables.

11.4 The major issues in contention appear to be:

- Whether enough is being done to reduce nutrients into Te Waihora/Lake Ellesmere
- Should the process be paused until more research or science is available
- The 15 kg/ha/pa nitrogen threshold
- The definition of "baseline land use"
- Whether the allocation method (modified-grandfathering) is appropriate
- Post 2017 Good Management Practice Nitrogen and Phosphorus Loss Rates
- Post 2022 percentage reductions in discharges, based on farming-sector profitability
- Enabling Central Plains Water
- The appropriateness of the farm environment plan and Schedule 24 actions framework
- Whether industrial and community waste disposal systems should have a separate nitrogen limit

11.5 Rather than analysing the common themes with respect to each policy or rule, the broader issues or themes have been analysed, in the context of the most relevant policy and rule discussion within the analysis of those themes.

11.6 Some of the above issues are more significant than others, particularly in relation to the overall framework of policies and rules in this sub-regional section. The more fundamental issues are:

- Whether "enough is being done" through this sub-regional section of the pLWRP, with or without the non-regulatory actions to address the over-allocation, in terms of both water quality and quantity, and within a reasonable timeframe?

- In the knowledge that good management practice will be codified and introduced into the pLWRP prior to October 2016 (region-wide policy 4.11) should the nutrient management provisions of this sub-regional section be removed until that time?
- Is the mix of permitted activities and consenting frameworks for the immediate future, post-2017, and post-2022 effective, efficient and reasonable?

11.7 These fundamental issues will drive a range of subsequent decisions to be made on the more detailed provisions in Variation 1.

11.8 These three fundamental issues are advanced strongly by a number of submitters. As is noted below, recommendations are not made in this Section 42A Report about a number of issues, including some of these fundamental issues. In addition, these fundamental issues may also represent significant changes to the Variation, such that the scope of the submissions received will need to be considered.

11.9 Where issues are addressed in the topic areas below, they are not repeated with respect to each rule or policy. This may lead some submitters to consider that their submission point on a specific rule has not been assessed appropriately. However, when the policies and rules, and the associated assessment is read as a whole, and recommendation made consistently across the relevant policies and objectives, the various submitter issues will have been assessed at some point in the consideration. For example, a submitter who requests that farm environment plans be staged into the future against a specific rule, may not see that submission addressed in relation to that rule, but would be able to find it in relation to the assessment of farm environment plans as a whole.

11.10 The water quality provisions of the NPSFM, the CRPS and objectives and strategic policies of the region-wide sections of the pLWRP are clearly highly relevant to the management of land uses that may affect water quality and point source discharges. Indeed, the higher level policy documents set a framework for managing nutrients, and consistency with these documents is mandatory. Where appropriate, the relevant objectives and policies from these documents have been included below, to provide context to the discussion and assessment.

11.11 It is also relevant to understand that the notified policy and rule position is largely based on the outcomes of the Zone Committee process. This clearly has the support of some sectors of the community, but lacks support from other sectors of the community and some industry groups. The Zone Committee approach has been informed by planning and science advice provided by the CRC. It is clear that a number of submitters have concerns about the science advice and analysis provided.

11.12 Several submitters have suggested that they will be presenting evidence at the hearing with respect to alternative science, as well as policies and rules. This information is generally not included in their submissions. On this basis, and given the broad range of submissions, there are a number of provisions for which recommendations are not made. There is analysis of the different positions reached in submissions, and the implications of some of those

positions, but in many instances no clearly preferable position is established in the submissions and accordingly no specific recommendation is made.

11.13 In line with the approach of not always making specific recommendations, it is also noted that the submissions raise a number of fundamental issues with respect to the management of nutrients in the Variation, such that decisions on these fundamental issues will have profound effects on the policy and rule regime. For example, a number of submitters have sought alternative allocation regimes or a pausing in the process, or at least the parts of the Variation that relate to nutrient management, until further science is completed. Should these submissions be accepted, substantial changes to the policy and rule framework will eventuate.

National Policy Statement (Freshwater), Regional Policy Statement and pLWRP Framework

11.14 The National Policy Statement for Freshwater Management, the Canterbury Regional Policy Statement and the region-wide objectives and strategic policies of the Land and Water Regional Plan set out the framework for water quality management in this sub-regional area. The critical objectives of the NPS and RPS are set out below. Other objectives and policies, particularly of the pLWRP, are set out in the most appropriate location within the text of the section of the Section 42A report. This has been done in order to guide the analysis of the most relevant sections of Variation 1.

National Policy Statement on Freshwater Management

Objective A1 *To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the use and development of land, and of discharges of contaminants.*

Objective A2 *The overall quality of fresh water within a region is maintained or improved while:*

a. protecting the quality of outstanding freshwater bodies
b. protecting the significant values of wetlands and
c. improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.

Regional Policy Statement

Objective 7.2.1 *Sustainable management of fresh water*

The region's fresh water resources are sustainably managed to enable people and communities to provide for their economic and social wellbeing through abstracting and/or using water for irrigation, hydro-electricity generation and other economic activities, and for recreational and amenity values, and any economic and social activities associated with those values, providing:

(1) the life-supporting capacity ecosystem processes, and indigenous species and their associated freshwater ecosystems and mauri of the fresh water is safe-guarded;

(2) the natural character values of wetlands, lakes and rivers and their margins are preserved and these areas are protected from inappropriate subdivision, use and development and where appropriate restored or enhanced; and

(3) any actual or reasonably foreseeable requirements for community and stockwater supplies and customary uses, are provided for.

Objective 7.2.2 Parallel processes for managing fresh water

Abstraction of water and the development of water infrastructure in the region occurs in parallel with:

(1) improvements in the efficiency with which water is allocated for abstraction, the way it is abstracted and conveyed, and its application or use;

(2) the maintenance of water quality where it is of a high standard and the improvement of water quality in catchments where it is degraded; and

(3) the restoration or enhancement of degraded fresh water bodies and their surroundings.

Nutrient Management Framework

11.15 This section addresses the broad nutrient management framework and the main issues identified in the submissions and further submissions. The policies and rules assessed in this part provide the broad framework within which the Variation manages nitrogen discharges in the Selwyn Te Waihora sub-region.

11.16 This assessment of the broad nutrient management framework responds directly to the objectives and policies of the NPSFM and RPS, as well as Policies 7.3.6 and 7.3.7 of the RPS. These policies broadly require the setting of water quality standards, to manage both point source and non-point source discharges to ensure the standards are met, and where the existing water quality is below the standards, to avoid additional allocation unless the activities are part of an integrated solution to water management. In addition, Policy 7.3.7 specifically identifies nutrient management from land use activities as being critical to the management of water quality:

Policy 7.3.6 Fresh water quality

In relation to water quality:

(1) to establish and implement minimum water quality standards for surface water and groundwater resources in the region, which are appropriate for each water body considering:

(a) the values associated with maintaining life supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, and natural character of the water body;

(b) any current and reasonably foreseeable requirement to use the water for individual, marae or community drinking water or stockwater supplies, customary uses or contact recreation;

(c) the cultural significance of the fresh water body and any conditions or restrictions on the discharge of contaminants that may be necessary or appropriate to protect those values; and

(d) any other current or reasonably foreseeable values or uses; and

(2) to manage activities which may affect water quality (including land uses), singularly or cumulatively, to maintain water quality at or above the minimum standard set for that water body; and

(3) where water quality is below the minimum water quality standard set for that water body, to avoid any additional allocation of water for abstraction from that water body and any additional discharge of contaminants to that water body, where any further abstraction or discharges, either singularly or cumulatively, may further adversely affect the water quality in that water body:

(a) until the water quality standards for that water body are met; or

(b) unless the activities are undertaken as part of an integrated solution to water management in the catchment in accordance with Policy 7.3.9, which provides for the redress of water quality within that water body within a specified timeframe.

Policy 7.3.7 Water quality and land uses

To avoid, remedy or mitigate adverse effects of changes in land uses on the quality of fresh water (surface or ground) by:

(1) identifying catchments where water quality may be adversely affected, either singularly or cumulatively, by increases in the application of nutrients to land or other changes in land use; and

(2) controlling changes in land uses to ensure water quality standards are maintained or where water quality is already below the minimum standard for the water body, it is improved to the minimum standard within an appropriate timeframe.

Policy 11.4.6 & 11.4.12 and Rules 11.5.6 and 11.5.7

11.17 Policy 11.4.6 reads:

11.4.6 Limit the total nitrogen load entering Te Waihora/Lake Ellesmere by restricting the losses of nitrogen from farming activities, industrial and trade processes and community sewerage systems in accordance with the target (the limit to be met over time) and limits in Table 11(i).

11.18 Policy 11.4.12 reads:

11.4.12 Reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from farming activities in the catchment by requiring farming activities to:

(a) Not exceed the nitrogen baseline where a property's nitrogen loss calculation is more than 15 kg of nitrogen per hectare per annum; and

(b) Implement the practices set out in Schedule 24; and

(c) Implement a Farm Environment Plan prepared in accordance with Schedule 7 Part A, from 1 July 2015, when a property is greater than 10 hectares and is within the Lake Area in the Cultural Landscape/Values Management Area; and

(d) Exclude stock from drains, in addition to the regional requirements to exclude stock from lakes, rivers and wetlands.

11.19 Rule 11.5.6 states:

11.5.6 Despite any of Rules 11.5.7 to 11.5.13, the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity provided the following conditions are met:

1. The property is less than 5 hectares; and

2. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum.

11.20 Rule 11.5.7 reads:

11.5.7 Until 1 January 2017 the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity provided the following conditions are met:

1. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum; or

2. The nitrogen loss calculation for the property is greater than 15 kg per hectare per annum and the nitrogen loss calculation for the property or farm enterprise will not increase above the nitrogen baseline; and

3. The Practices in Schedule 24 are being implemented and the information required is recorded in accordance with Schedule 24, and supplied to Canterbury Regional Council on request; and

4. From 1 July 2015, for properties within the Lake Area in the Cultural Landscape/Values Management Area a Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 10 hectares.

11.21 Several submitters supported the intent of Policies 11.4.6 and 11.4.12 in the management of nitrogen, including NZ King Salmon, and the Director General of Conservation. A large number of submitters seek amendments as discussed below.

11.22 Some submitters seek amendments to soften the wording of Policy 11.4.6. Some submitters, such as Ellesmere Irrigation Society and Horticulture NZ, seek to amend the language of Policy 11.4.6 – for example from “limit” to “reduce”. Others request that the reference to Table 11(i) in Policy 11.4.6 be removed, including Fish and Game, Ellesmere Irrigation Society and Horticulture NZ. Ravensdown requests to amend the reference to “restricting” to “controlling” to be consistent with section 30 of the RMA.

11.23 The above submission points received mixed responses from further submitters. Generally the submission points received half in opposition and half in support and were repeated against each submission point.

11.24 Horticulture NZ seeks to amend Policy 11.4.12 by changing the wording from "Reduce" to "Manage", and the addition of "farming enterprise" after "property".

11.25 Ravensdown seeks a review of Policy 11.4.12 to consider phosphorus loss, as the introduction of Section 10 of this report discusses the 50% reduction of phosphorus. Ravensdown and others seek to clarify the relationship between Policy 11.4.12 and Policies 11.4.13 - 11.4.16 and in particular whether the requirements of Policy 11.4.12 prevail over the requirements and timeframes included in Policies 11.4.13 - 11.4.16 once they are implemented.

11.26 Federated Farmers requests to delete the policy and replace it with the following:
"Reduce the discharge of nitrogen, sediment, phosphorous and microbial contaminants from farming activities into the catchment by:

(a) Excluding intensively farmed livestock from all waterways and avoid the standing of cattle, pigs or deer in any waterway except for those parts of the catchment shown as hill and high country on Planning Map X.

(b) Providing setbacks for grazing and cultivation from waterways and where appropriate riparian planting.

(c) Requiring all farming practices to implement the good management practices listed in Schedule 24 to minimise the discharge of contaminants to water;

(d) Avoiding any increase in nitrogen-nitrate loss from any property or farm enterprise if the estimated nitrogen loss using OVERSEER® is greater than 15kg per hectare per annum ; and

(e) Requiring those properties or farm enterprises with nitrogen-nitrates losses which are estimated using OVERSEER® to exceed 15kg per hectare per annum to manage their nitrogen-nitrate losses in accordance with Policy 11.4.13".

11.27 Dairy NZ seeks the inclusion of a method to develop a mechanism that provides for the transfer of nitrogen loss rates, which enables flexibility, and T Robilliard seeks to delete the rules and replace with a fairer method of allocating nitrogen losses for all farms over 10 ha based on soil retention and total water applied. T Robilliard is concerned that farms with low environmental impacts are severely penalised and suggests some type of nitrogen trading scheme.

11.28 Beef + Lamb NZ seeks (among other things):

- Amendment Policies 11.4.6-11.4.17 and Rules 11.5.6-11.5.15 to provide a more consistent and equitable approach to managing the discharge of contaminant nitrogen to water, that does not restrict land use change or change land value on the basis of current use.
- To delete references to 'nitrogen discharge allowances' and replace with 'maximum permitted contaminant loss' to more accurately reflect what is being discussed and to remove any suggestion that there are 'rights' or 'entitlements' associated with the discharge of contaminants into the environment.
- To amend the policies and rules of Variation 1 to provide for a more equitable and sustainable approach to nitrogen loss within the catchment. The submitter states that

the approach detailed in the Variation penalises low leaching activities and rewards high leaching activities.

11.29 Policy 11.4.6 is a broad overall policy that provides direction to the remainder of the policies and rules in the Variation. Submitters have generally not submitted on this Policy, but have focused on the more specific policies and rules that seek to manage nutrients in relation to specific activities in the Variation. However, Policy 11.4.6 clearly provides an overall framework.

11.30 Several submitters have sought alterations to Policy 11.4.12, including wholesale changes. Some submitters such as Federated Farmers seek clarification with respect to the relationship of Policy 11.4.12 with other policies. Other submitters seek changes relating to specific issues. Many of these issues are addressed below in this part of this Section 42A Report. This is because the issues raised, such as the 15 kg/ha/pa threshold or farm environment plans are raised in submissions throughout the policies and rules.

11.31 A number of submitters have raised the degree to which phosphorous is managed in the Selwyn Te Waihora sub-regional area. It is clear that there are legacy phosphorous issues in Te Waihora/Lake Ellesmere, and there are issues with phosphorous runoff, particularly into lowland streams. It is also clear that the tools presently available to estimate phosphorous loss, such as Overseer, are considerably less well developed than they are with respect to nitrogen management.

11.32 At this point in time, the largest gains with respect to phosphorous losses can be made through farm environment plans, by excluding stock from accessing waterways, the riparian planting of waterways and drains, and avoiding overland flow of water. Farm environment plans can encapsulate many of these actions by assisting with the management of fertilisers, as well as stock access and avoiding runoff.

11.33 Nevertheless, some phosphorous losses, particularly in areas subject to high water levels and poor drainage are likely to continue. It is a particular risk for heavier soils (predominantly at the coastal end of the sub-regional area, which also tend to leach less nitrogen) and areas with waterways flowing through. As a matter of practicality, the Variation does differentiate the management of nitrogen and phosphorus, due to the tools and techniques for nitrogen leaching estimation being more developed. Phosphorous management is primarily through exclusion of stock from waterways, the actions in Schedule 24 and a number of the non-regulatory actions. Over time, particularly with the development of good management practice loss rates, phosphorous loss estimation is likely to be improved.

11.34 Several submitters have questioned the relationship between Policy 11.4.12 and Policies 11.4.13 to 11.4.16. There is some potential for conflict between these policies, as they apply over different time frames and have differing levels of specificity. Overall, when read as a whole, and in combination with the resulting rule regimes, the potential for conflict does not appear to be significant.

11.35 A significant number of submitters have challenged the establishment of rules based on existing land uses, and the potentially limiting nature of nutrient discharges from those land uses. In addition, there are requests for alternative allocation regimes, such as an equal allocation of nutrient discharges on a per hectare basis, or determining allocations dependant on topography, and soil and climate capability, along with requests for trading mechanisms.

11.36 A number of submitters suggest some form of alternative allocation methodology would be appropriate. In particular, some suggest that some form of "equal allocation" for nutrient load would be more equitable within the catchment. This has been assessed by the Zone Committee. The Zone Committee's key considerations were the economic and social implications of an allocation mechanism for the entire sub-regional area. On this basis, a mechanism that had the least impact on existing land users, and did not rely on trading, was considered a more appropriate model to follow in the sub-regional area.

11.37 While the equal allocation model or some of the other mechanisms suggested, have some positive aspects and potentially are more equitable, there are significant risks and administrative issues with a catchment of this size. Most alternatives would require some form of accounting and trading regime to be established in order to be successfully implemented, and at this point in time there does not appear to be a simple solution that would enable equal allocation or one of the other models of allocation to be easily adopted. Further, the present structure of the pLWRP and Variation 1 is based on land use rules and consents, for which trading and transfer are not anticipated by the RMA.

11.38 Overall, fundamental change in the allocation mechanism is likely to be beyond the scope of the hearing process, given the fundamental changes that would be required to the policies and rules, along with the mechanisms that it would presumably commit the CRC to implement. Furthermore, there are likely to be a number of other parties that would seek to make comment and be involved in the process should such an alternative be implemented.

11.39 The establishment of a modified grand-parenting approach, based on existing land uses, is consistent throughout the pLWRP, and enables the future setting of per property discharge limits based on the work presently underway to establish good management practice nitrogen and phosphorus limits.

11.40 Fundamental changes in the nature of the allocation regime are likely beyond the scope of the submissions and what can be undertaken through the hearing process.

Ongoing Review of Nitrogen and Phosphorus Limits

11.41 Different review mechanisms were sought by several submitters.

11.42 Dairy NZ and Fonterra are concerned that the modelling used does not provide a robust assessment of the current and future catchment nutrient load; and does not necessarily reflect the Good Management Practice Nitrogen and Phosphorus Loss Rates that will apply in the future[132]. Relief is sought by including a commitment at a policy level to keep the nitrogen limits and targets under review.

11.43 This submission point attracted six further submissions. Three submissions from Horticulture NZ, Central Plains Water and Ravensdown are in support, two in opposition and one opposes in part.

11.44 The review concept is discussed in a number of submissions, including in amendments sought by Forest and Bird, Te Taumutu Rūnanga, Synlait Farms, Synlait Milk and J Demeter. A significant number of the submitters have requested a 5-yearly review of the policies, limits, targets and the rules and timeframes to achieve those limits and targets. Some submitters, such as J Demeter, seek shorter timeframes for achieving reduced nutrient loads.

11.45 In regard to Forest and Bird's submissions, five further submissions were received. Three further submissions in opposition were received from submitters such as Balance Agri-Nutrients and ANZCO & CMP. Central Plains Water and Federated Farmers supported in part and opposed in part.

11.46 Horticulture NZ seeks to include a new policy*: "Targets and limits set in this variation will be reviewed before 2017 to ensure that the refinements in methodology and models used are reflected in the allocation and targets and limits set."* This additional policy received a mixed response from further submitters. Four submissions were received in support, opposition, support in part and oppose in part.

11.47 Other review processes are discussed by submitters such as Waihora Ellesmere Trust who seek clarification of the timeframe and review process for the Selwyn Te Waihora sub-regional area; and Forest and Bird which seeks to amend the Plan so that it is sufficiently reiterative to be able to make any necessary adjustments, including reviewing of consents at regular intervals, to ensure that sustainable management is achieved during the life of the Plan.

11.48 A number of submitters have suggested, strongly, that not enough is being done in the catchment to reduce nutrients entering Te Waihora/Lake Ellesmere. The submitters consider that the outcomes for the lake are clearly not being met, are often set too liberally, the mitigation measures may not occur, and the introduction of 30,000 hectares of additional irrigation into the catchment, via Central Plains Water, will further exacerbate the nutrient enrichment of the lake.

[132] See further assessment below

11.49 Clearly these issues have challenged the Zone Committee throughout the development of the ZIP Addendum. The Zone Committee has sought to reach a balanced position between the needs of the lake, social and economic outcomes and the strong association of Ngai Tahu with Te Waihora/Lake Ellesmere. This exercise has been aided by the CWMS targets and has clearly resulted in the Zone Committee reaching a delicate balance, which requires the successful implementation of a number of non-regulatory actions in order to have confidence that the outcomes for Te Waihora/Lake Ellesmere and the lowland streams will be met.

11.50 A number of submitters have consistently requested, throughout their submissions on the policies and various limits, that regular reviews of the policies, rules and limits be undertaken. While it is outside the scope of the Variation to commit future Councils to reviews and potential revision of the policies and limits and targets, it is clear that the overall policy position of the higher level documents, such as section 35(2) of the RMA, the NPSFM and the RPS, would inherently require review if the outcomes were not being met.

11.51 The concern of some submitters is that relying on an implicit review regime and identification of outcomes not being met may be too late to enable a healthy outcome for the lowland streams and Te Waihora/Lake Ellesmere, particularly given the significant lag time of nutrients between on-farm leaching and appearance in the lowland streams and springs.

11.52 As committing future Councils to such a review is possibly not appropriate, and setting a more conservative catchment nutrient limit in the interim is likely to be unrealistic, reliance on the legislative reporting and review regime is considered adequate.

15 kg/ha/pa Nitrogen Threshold

11.53 A large number of submitters have requested changes to the 15 kg/ha/pa nitrogen threshold, first used in Policy 11.4.12, including:

- J Townshend requests that the 15 kg/ha/pa be substantially increased - consistent with Policy 11.4.16 (80 kg/ha/pa) in some cases. This submitter also seeks the minimum area threshold in Rule 11.5.6 be increased to 50ha and the threshold in Rule 11.5.7 to "a more realistic figure of 30 kg/ha/pa."
- Ellesmere Irrigation Society requests that the threshold be changed from 15 to 20 kg/ha/pa.
- Some submitters, such as G Power, T Ferguson and M Bruce, seek a general increase from 15 kg/ha/pa. McKavanagh Holdings Ltd seeks other methods.
- G Bain seeks to increase the 15 kg/ha/pa threshold to 35 kg/ha/pa.

11.54 A number of submitters have requested the increase of the present 15 kg/ha/pa threshold to 20 kg/ha/pa, 30 kg/ha/pa or more. The effects of this on the nitrogen load limit are set out below:

- 20 kg/ha/pa – increase to approximately 111% of the proposed catchment load limit
- 25 kg/ha/pa – increase to approximately 124% of the proposed catchment load limit
- 30 kg/ha/pa – increase to approximately 139% of the proposed catchment load limit[133]

11.55 Clearly, the raising of the 15 kg/ha/pa nitrogen threshold would have significant implications for the ability of the Variation to achieve the outcomes set.

11.56 Other submitters have questioned why the 15 kg/ha/pa nitrogen threshold is different to the region-wide threshold of 10 kg/ha/pa. These matters are addressed in the recommendations from the primary sector, Ngai Tahu and CRC staff, as included in Appendix 2 of the ZIP Addendum (Appendix F of this Report). Essentially, within the catchment load limit, discussions eventuated regarding what could be accommodated as a threshold, acknowledging that for any increase in the threshold, greater mitigations would be needed. Through that process, 15 kg/ha/pa was established as a threshold that could be accommodated.

11.57 An increase above 15 kg/ha/pa would require the increase to be off-set by some other mechanism, in order to remain within the target.

Specific Changes

11.58 G Martin requests penalties for bad farming practice and the use of 'wrong nutrients'. I Upston generally seeks no additional compliance costs.

11.59 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks the following amendments to Rule 11.5.6 to require nutrient budgets for all rural activities:
"Despite any of Rules 11.5.7 to 11.5.13, the use of land for a farming activity or farming enterprise in the Selwyn-Waihora catchment is a permitted activity provided the following conditions are met:"

1. *(a) A nutrient budget has been prepared and implemented in accordance with Overseer™ or an alternative method approved by Environment Canterbury; or*
   (b) records have been kept in accordance with Schedule X; and
2. *The property or farming enterprise is less than 10 ~~5~~ hectares in area and the nitrogen loss calculation for the property or faming enterprise is less than 15kg/ha/year;*[134]

11.60 Federated Farmers discusses compliance costs for calculating rolling baseline average and identifies its concern that the rules will not result in nitrogen reduction. Federated Farmers therefore seeks to amend Rule 11.5.6 condition 2 to read:

[133] See M Robson, Overview Report February 2014, R14/15
[134] The submission appears to have an additional condition, which is identical to condition 2. The additional condition is not shown here, as it is assumed to be a typographical error in the submission.

"*The nitrogen baseline for the property does not exceed 15kg per hectare per annum or 20kg per hectare per annum in areas shown on Planning Map XX as light and very light soils, and since the baseline was calculated there has been:*

(a) No increase in irrigable area on the property; and

(b) No increase in the number of weaned cattle grazed on the property; and

(c) No increase in the area under cultivation on the property;"

11.61 Or alternatively, "*The nitrogen loss calculation for the property does not exceed 15kg/ha/yr or 20 hg/ha/yr in areas shown on Planning Map XX as light and very light soils."*

11.62 Ravensdown seeks to amend Rule 11.5.6 so that only one of the conditions need to be met, by deleting the word "and". Balance Agri-Nutrients seek similar amendments to Rule 11.5.6 by increasing the property size to less than 50ha. KO Farms Ltd also seeks amendments to allow for farms less than 50ha as permitted activities.

11.63 Synlait Farms, Synlait Milk, and Fonterra seek an additional condition for Rule 11.5.6 to provide for the disposal of industrial or trade process waste. The submitters suggest similar wording; Fonterra request the condition read:

1. The property is used for the disposal of wastewater or liquid waste from an industrial or trade process and a resource consent has been granted for that discharge that limits nitrogen loss from that property;

11.64 Te Rūnanga O Ngāi Tahu seek to amend Rule 11.5.7 by:

"Until 1 January 2017 the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity provided the following conditions are met:

~~1. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum; or~~

1. The farming activity is not located within the Cultural Landscape/Values Management Area; and

2. The farming activity is not irrigated with water from an irrigation scheme; and

~~2.~~3. ~~The nitrogen loss calculation for the property is greater than 15 kg per hectare per annum and~~ the nitrogen loss calculation for the ~~property~~ farming activity or farm enterprise will not increase above the nitrogen baseline; and

~~3.~~4. The Practices in Schedule 24 are being implemented and the information required is recorded in accordance with Schedule 24, and supplied to Canterbury Regional Council on request; and

~~4.~~5. From 1 July 2015, for properties within the Lake Area in the Cultural Landscape/Values Management Area a Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 10 hectares".

11.65 A range of detailed submissions have been lodged with respect to Rules 11.5.6 and 11.5.7. These rules set out the basic permitted activities for very small (<5 hectares) farms and low nutrient leeching farms until 2017. The submissions generally seek adjustments to the existing rules, and some seek changes to relate to rules relating to the discharge of industrial and trades wastes. While the submitters have raised a range of matters with respect to the

rules, in advance of hearing all of the issues with respect to the suite of rules relating to nutrient discharges from farming activities, no particular recommendations are made with respect to Rules 11.5.6 and 11.5.7.

11.66 It is noted that the Ngai Tahu amendments detailed above would require nutrient budgets to be prepared for a large number of lifestyle blocks and other "farming activities" on very small properties. In reality, the vast majority of these properties are generally farmed at quite low levels of intensity. Certainly, irrigation is uncommon on these small properties. As Overseer outputs, when used by unqualified people, are less reliable, the benefits of undertaking nutrient budgets for these small properties is unlikely to be outweighed by the costs.

Nutrient Limit Setting - Tables 11(k), 11(l) and 11(m)

11.67 The broad framework for setting limits is included in the pLWRP, and more specifically in Policies A1 and A2 of the NPSFM:

Policy A1
By every regional council making or changing regional plans to the extent needed to ensure the plans:

a. establish freshwater objectives and set freshwater quality limits for all bodies of fresh water in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:
   i. the reasonably foreseeable impacts of climate change
   ii. the connection between water bodies

b. establish methods (including rules) to avoid over-allocation.

Policy A2
Where water bodies do not meet the freshwater objectives made pursuant to Policy A1, every regional council is to specify targets and implement methods (either or both regulatory and non-regulatory) to assist the improvement of water quality in the water bodies, to meet those targets, and within a defined timeframe.

11.68 The following objectives and policies of the pLWRP are also relevant:

3.8 The quality and quantity of water in fresh water bodies and their catchments is managed to safeguard the life-supporting capacity of ecosystems and ecosystem processes, including ensuring sufficient flow and quality of water to support the habitat and feeding, breeding, migratory and other behavioural requirements of indigenous species, nesting birds and, where appropriate, trout and salmon.

3.8A High quality fresh water is available to meet actual and reasonably foreseeable needs for community drinking water supplies.

3.12 When setting and managing within limits, regard is had to community outcomes for water quality and quantity.

4.5 Water is managed through the setting of limits to safeguard the life-supporting capacity of ecosystems, support customary uses, and provide for group or community drinking-water supplies and stock water, as a first priority and to meet the needs of people and communities for water for irrigation, hydro-electricity generation and other economic activities and to maintain river flows and lake levels needed for recreational activities, as a second priority.

Table 11(i) (Part)

11.69 Table 11(i) – relates to limits and targets for nitrogen discharges. Part of this Table is relevant to discharges from farming, and states:

Catchment	***Activity***	***Nitrogen Load (tonnes/year)***	***Limit/Target***
Selwyn Waihora	*Farming*	*4830*	*Target to be met by no later than 2037*

This target includes the limit for 2022 in Table 11(j)

Table 11(k)

11.70 Table 11(k) reads:

Table 11(k): Limits for Rivers

River type	*Type*	*Measurement*	*Limit Nitrate-nitrogen concentration (mg/l)*
Alpine - upland	*Nitrate toxicity*	*Annual median*	*1*
		Annual 95th percentile	*1.5*
Hill-fed - upland	*Nitrate toxicity*	*Annual median*	*1*
		Annual 95th percentile	*1.5*
Hill-fed - lower(1)	*Nitrate toxicity*	*Annual median*	*2.4*
		Annual 95th percentile	*3.5*
Banks Peninsula	*Nitrate toxicity*	*Annual median*	*1*
		Annual 95th percentile	*1.5*
Spring-fed – plains(2)	*Nitrate toxicity*	*Annual median*	*6.9*
		Annual 95th percentile	*9.8*

(1) Excluding Hawkins River which has an annual median limit of 3.8 mg/l and annual 95th percentile of 5.6 mg/l

(2) Excluding Boggy Creek and Doyleston Drain.

Table 11(l)

11.71 Table 11(l) reads:

Table 11(l): Limits for Lakes

Lake	*Location*	*Target*			
		TLI(2)	*TP(1)*	*TN(1)*	*Chl a(1)*
Te Waihora/Lake Ellesmere	*Mid lake*	*6.6*	*0.1*	*3.4*	*74*
	Margins	*6*	*Not modelled(3)*	*Not modelled(3)*	*Not modelled(3)*
Coopers Lagoon		*4*	*0.020*	*0.340*	*5*
(1) As a maximum annual average			*mg/L*	*mg/L*	*ug/L*

(2) TLI assumed to be calculated as a TLI3 (using TP, TN and chl a).

(3) The anticipated TLI of 6 in the margins of Te Waihora to be driven primarily by improved water clarity in the lake margins as a result of re-establishing macrophyte beds. It is expected that concentrations of TP, TN and/or Chl a would also reduce in the margins compared to the mid lake, but it is not possible at this time to set numbers for these concentrations.

Table 11(m)

11.72 Table 11(m) reads:

Table 11(m): Limits for Groundwater

Contaminant	*Measurement*	*Target*
Nitrate-N	*5-year annual average concentration(1)*	*8.5 mg/L*
Ecoli	*Median concentration(2)*	*< 1 organism/100 millilitres*
Other contaminants(3)	*Any sample*	*< 50% MAV(4)*

(1) In shallow groundwater < 50 metres below groundwater level.

(2) Measured over the length of the record.

(3) Other contaminants of health significance as listed in NZ Drinking Water Standards.

(4) Maximum Acceptable Value (as listed in (3) above).

11.73 Table 11(i) received a significant number of submissions. Those parts of Table 11(i) that relate to community and industrial discharges are dealt with separately below.

11.74 A number of submitters, also discussed below in relation to Tables 11(i) and (j), have expressed significant concerns with respect to the numbers in the tables as either targets or limits. In most instances, these submitters have identified that there is additional work being undertaken and that they will present information at the hearing. In addition, submitters have asked that the tables are "corrected" or "updated" based on better science, presumably through the hearing process, without specifying what the corrections or updates may be. At this point, given that the information is not yet forthcoming, it is not possible to make any recommendations other than to stay with the present regime.

11.75 Table 11(k) received a number of submissions; Table 11(l) received very few submissions and Table 11(m) received a limited number of submissions.

11.76 Ellesmere Irrigation seeks to amend Table 11(k) point (2): *"Excluding Boggy Creek, and Doyleston Drain, Hanmer Road Drain and Unnamed Drain at Prendergast Property"*. In contrast, D Rankin submits on point 2 stating that limits for Boggy Creek and Doyleston Drain should be included.

11.77 Nitrate-nitrogen concentrations were modelled for nine lowland streams under the Zone Committee's Integrated Solution Package[135]. Hanmer Road Drain is modelled as meeting the limit for spring-fed plains streams and so should not be excluded. Modelled nitrate-nitrogen concentrations suggest that Boggy Creek and Doyleston Drain are highly unlikely to meet the limits for spring-fed plains streams (80% biodiversity protection threshold), which is why they are footnoted as exceptions. It may be appropriate to consider deleting the exclusions if the limits are to relate to nitrate concentrations averaged across all spring-fed lowland streams as a Freshwater Management Unit.

11.78 Fish and Game seeks to amend Table 11(k) to include phosphorus limits. Fish and Game also seeks clarification on how the limits in both Table 11(k) and Table 11(l) prevail over the region-wide limits in Schedule 8 of the pLWRP and how these limits have been derived. Fish and Game suggests alternative and additional water quality limits to those in the Tables to meet the requirements of Part 2 of the RMA, NPSFM, CRPS and the vision and principles of the CWMS.

11.79 D Rankin questions the compliance of Table 11(k)'s limits with the NPSFM. The submitter discusses the nitrate-N concentration limits set for different rivers in the catchment and considers this as possibly unlawful. No specific decision is requested.

11.80 Dairy NZ and Fonterra seek to amend Table 11(k) by amending the nitrate limit for the Hill-fed-lower rivers to correspond to an 80% level of protection (i.e. a median of 6.9 mg/L and 95%ile of 9.8 mg/L).

11.81 Regarding Table 11(l), Selwyn DC submits in support and Ellesmere Irrigation Society Inc submits in opposition requesting deletion.

11.82 In terms of Table 11(m) submissions were received in general opposition. The Canterbury District Health Board however, supports the retention of the E coli limits.

11.83 J Townshend seeks to amend the target for nitrate-N in Table 11(m) to 10 mg/L. The Canterbury District Health Board seeks to include a longer term target of 5.6 mg/L nitrate nitrogen average concentration in line with the drinking water target of 2040.

11.84 I Duff has no specific decision request however states his opposition to a nitrate-N level of 8.5 ppm being tolerated as an average level in drinking water wells.

11.85 General submissions on all three tables were also lodged by Dairy NZ and Fonterra, who request the inclusion of a new method in Variation 1 committing the Council to monitor and review the effectiveness of the limits of Table 11(k), Table 11(l) and Table 11(m) and

[135] Technical Report to support the water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting the consequences of future scenarios: surface water quality and ecology in lowland streams Report No. R14/13 (Kelly 2014).

associated rules, as well as non-regulatory methods, and to make adjustments to the limits on the basis on improved information.

11.86 Horticulture NZ seeks reconsideration of the Tables informed by scientific review.

11.87 During the drafting of this Report, and subsequent to the submissions and further submissions process, the NPSFM was amended in July 2014. This amendment included the "National Objectives Framework", which sets out a range of processes, values, and numeric attributes. It is clear that Variation 1 has a number of overlaps with the National Objectives Framework, while acknowledging alignment issues with some attributes. While it may be desirable to update some of the limit tables to align with the National Objectives Framework attributes, there are issues with respect to the scope of submissions. On this basis, no particular adjustments to these Tables are recommended presently.

Recommendation R Table 11(i) (Part)

Amend Table 11(i) as follows (consequential to discussion of other parts of Table 11(i) below):

Catchment	***~~Activity~~***	***Nitrogen Load (tonnes/year)***	***Limit/Target***
Selwyn Waihora	*~~Farming~~*[136]	*4830*	*Target to be met by no later than 2037*

This target includes the limit for 2022 in Table 11(j)

Recommendation R Table 11(k)

That Table 11(k) be retained without amendment.

Recommendation R Table 11(l)

That Table 11(l) be retained without amendment.

Recommendation R Table 11(m)

That Table 11(m) be retained without amendment.

Definition of Baseline Land Use (and Nitrogen Baseline)

11.88 The definition of Baseline Land use reads:

Baseline Landuse means the land use, or uses, on a property between 1 July 2009 and 30 June 2013 used to determine a property's 'nitrogen baseline' as defined in section 2.10 of this Plan.

[136] Consequential change addressed below in relation to community and industrial limit discussion.

11.89 A number of submissions were received on the definition of baseline land use. Several submitters seek that the definition be deleted, including P Chamberlain, Ellesmere Irrigation Society and Ravensdown. The submitters view the term as inappropriate.

11.90 Synlait Milk seeks amendment in light of the land owners who obtained a consent or change between 2009/2013. Likewise, NZPork seeks the following amendment: *"Means the land use, or uses, on a property between 1 July 2009 and 30 June 2013 used to determine a property's 'nitrogen baseline' as defined in section 2.10 of this plan. In cases where a building consent, effluent discharge consent or other consent has been granted for a new or changed activity in the period 01 July 2009 - 30 June 2013, the definition of 'Baseline Land Use' will be on the basis that the activity is operational".*

11.91 Horticulture NZ seeks to amend the Variation to include a new policy: *"The nitrogen baseline for a property or enterprise can be re-assessed where it can be demonstrated that the 4 years 2009-2013 do not accurately reflect the nature of the operation."*

11.92 Canterbury Grasslands Group, H & R Oakley and A & S Rayne seek to amend Baseline Land Use to be the highest out of the previous 4 years. Similarly, H Macartney seeks to amend the average of two highest years out of the 10 previous years.

11.93 Horticulture NZ seeks to amend the definition of Baseline Land Use by adding after "property", the term "or farming enterprise."

Nitrogen Baseline

11.94 The definition of nitrogen baseline is contained within the region-wide definitions of the pLWRP. The nitrogen baseline is used for nutrient management in the Selwyn Te Waihora sub-regional area. It first occurs in Policy 11.4.12. Many of the submitters on Policy 11.4.12 submit on the use of the nitrogen baseline and oppose any use of it.

11.95 K Townshend and J Townshend oppose the nitrogen baseline as farms with good environmental performance and environmental plans will be penalised.

11.96 Other submitters, such as I Chatterton, are concerned with the averaging of four years (2009-2013) as farms that have been in development phase over this period will have a baseline that does not reflect the current land use activity. I Chatterton seeks to amend 'Nitrogen Baseline' to reflect current farming practice then in 2017 meet Good Management Practice for the relevant type of farming i.e. dairy, dairy support, sheep etc.

11.97 S Thornley suggests that farming baselines should be developed around good farming practices and modern technology rather than a nominal figure and provide for farms that were under development during the baseline period 2009-13 and even into the 2013-14 season.

11.98 Irrigation NZ seeks to add a new definition for the Selwyn Te Waihora sub-regional section.

11.99 Other submitters, such as R McMarth, request a new limit system where transfers can be made.

11.100 R McMath seeks to amend 'nitrogen baseline' in the rules by determining an acceptable nitrate leaching amount which all farms can work towards but not exceed, allowing some farms to decrease and others the ability to increase and removing land value distortion by allowing high and low leaching farms in 09 - 13 to be on an equal playing field.

11.101 NZ Pork requests the following amendments to Policy 11.4.12 point (a):

(a) Not exceed the nitrogen baseline where a property's nitrogen loss calculation is more than 15kg of nitrogen per hectare per annum (In cases where a building consent, effluent discharge consent or other consent has been granted for a new or changed activity in the period 01 July 2009 - 30 June 2013, the definition of nitrogen baseline will be on the basis that the activity is operational).

11.102 Fonterra and Dairy NZ request a new definition and name for this sub-regional section of the pLWRP – "Selwyn-Waihora Nitrogen Baseline". Both submitters identify the issues with the calculation of the nitrogen baseline and the nitrogen loss calculation; and request new definitions to address these issues. The definition requested by Fonterra is supported by four further submitters including Horticulture NZ, Federated Farmers, Central Plains Water and Fertiliser Association.

11.103 Beef + Lamb NZ seeks to amend the definition of 'nitrogen baseline' to read:

"(a) The ~~mean~~ maximum discharge of nitrogen below the root zone in any one year, as modelled with OVERSEER®, or equivalent model approved by the Chief Executive of Environment Canterbury, over the period of 01 July 2009 - 30 June 2013, and expressed in kg per hectare per annum, except in relation to Rules 5.46 and 5.62, where it is expressed as a total kg per annum from the identified area of land; and

(b) in the case where a building consent or an effluent discharge consent have been granted for a new or upgraded dairy milking shed, or a new or upgraded irrigation system has been commissioned or a building consent granted for a new or upgraded facility associated with the farming operation or significant change in intensity of operation implemented in the period 01 July 2009 - 30 June 2013, the calculation under (a) will be on the basis that the ~~dairy~~ farming activity is operational; and

(c) if OVERSEER® is updated, the most recent version is to be used to recalculate the nitrogen baseline using the same input data for the period 01 July 2009 - 30 June 2013".

11.104 Four further submissions were received on Beef + Lambs submission. Further submitters generally supported the amendment in part. Submissions were received from Ravensdown, Federated Farmers and Central Plains Water.

11.105 Four submitters, including Canterbury Grassland Group, seek that any required nitrogen loss reduction is phased in over a period of 25 years.

11.106 Other submitters, such as Fonterra, Synlait Milk and Synlait Farms, seek amendments to the Nutrient Loss Calculation definition of the region-wide definitions of the pLWRP. Fonterra seeks a separate definition for the Selwyn Te Waihora sub-regional chapter.

11.107 Overall, the various, and inter-related, definitions appear to have caused a degree of confusion as to how they operate and what was included in Variation 1. Baseline land use is fundamental to the operation of the Variation beyond 2017. On this basis, it is recommended to continue.

11.108 A number of submitters seek changes to the region-wide definition of nitrogen baseline or the addition of a specific definition of nitrogen baseline for the Selwyn Te Waihora sub-regional section. The present definition requires a four year average. This has been accepted as causing some issues, particularly in the initial phases of implementation of the pLWRP, as farming decisions may have been taken that are not easy to change in the first year or so of pLWRP implementation. On this basis, the CRC has published guidance, acknowledging that there is a transition required to the new regime, and accepting that the "highest" of the previous four years is acceptable in the interim, but reserves the right to take enforcement action against a farmer if the nitrogen loss calculation for the property is higher than the worst year in the nitrogen baseline period, and there is no evidence of a genuine attempt to remain within the baseline[137].

11.109 The majority of submitters consider that this position, using the "highest" discharge rate over the previous four years (2009 to 2013 period) should be the basis of the nitrogen baseline definition. It is understood that with changing climatic, production and farming decisions, the year to year variation in nutrient discharges can be significant. On this basis, across the catchment, the use of the highest of the four years, instead of the average, could easily lead to a substantial increase in the catchment load. This would apply for the first three years of the Variation, as post-2017 there is a requirement to meet the good management practice discharge rates for the farming system that existed prior to the variation being notified, and the nitrogen baseline is rather less relevant.

11.110 If the general presumption that nitrogen discharges into the catchment are presently exceeding the levels where the outcomes will be met, and in the absence of other mitigations, it would seem difficult to justify a change in the definition that would lead to even a short-term increase in the discharge of nitrogen.

11.111 Overall, the definitions of nitrogen baseline and nitrogen loss calculation are contained in the region-wide definitions in the pLWRP. The Variation did not seek to introduce new definitions or make changes to the region-wide definitions. A small number of submitters request changes to the region-wide definitions, which would appear to be clearly outside the scope of the Variation. Other submitters seek specific definitions for this sub-regional section. This is not considered appropriate as it will create a different basis for the Selwyn

[137] See: http://ecan.govt.nz/publications/Plans/lwrp-nitrogen-baseline-compliance-note.pdf

Te Waihora sub-regional area, lead to a general expectation in other sub-regional areas that the same principle will apply, and will likely lead to greater difficulties in achieving the nutrient target in the medium term.

Post 2017 Meeting Good Management Practice Nitrogen and Phosphorus Loss Rates

Policy 11.4.13 and Rules 11.5.8 and 11.5.9

11.112 Policy 11.4.13 reads:

11.4.13 From 1 January 2017, further reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from farming activities in the catchment by requiring farming activities to:

(a) Implement a Farm Environment Plan prepared in accordance with Schedule 7 Part A, where a property is greater than 50 hectares; and

(b) Where a property's nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum, meet the Good Management Practice Nitrogen and Phosphorus Loss Rates for the property's baseline land use.

11.113 Rule 11.5.8 reads:

11.5.8 From 1 January 2017, the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity, provided the following conditions are met:

1. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum; and

2. A Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 10 hectares within the Lake Area in the Cultural Landscape/Values Management Area, and is supplied to Canterbury Regional Council on request; and

3. A Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 50 hectares, and is supplied to Canterbury Regional Council on request;

4. For properties less than 50 hectares but greater than 20 hectares:

(a) Until 31 December 2021, the Practices in Schedule 24 are being implemented; and

(b) From 1 January 2022, a Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A.

11.114 Rule 11.5.9 reads:

11.5.9 From 1 January 2017, the use of land for a farming activity in the Selwyn Waihora catchment is a restricted discretionary activity, provided the following conditions are met:

1. The nitrogen loss calculation for the property is greater than 15 kg per hectare per annum; and

2. *A Farm Environment Plan has been prepared in accordance with Schedule 7 Part A; and*
3. *The nitrogen loss calculation for the property has not increased above the nitrogen baseline.*

The exercise of discretion is restricted to the following matters:

1. *The quality of, compliance with the Farm Environment Plan; and*
2. *The Good Management Practice Nitrogen and Phosphorus Loss Rates to be applied to the property in accordance with Policy 11.4.13(b); and*
3. *The nitrogen loss rates to be applied to the property in accordance with Policy 11.4.14 (b), Policy 11.4.15 and Policy 11.4.16; and*
4. *The nitrogen load target for farming activities in Table 11(i); and*
5. *The potential benefits of the activity to the applicant, the community and the environment.*

11.115 The policy and rule framework for "Post-2017" received a significant number of submissions. Several submissions are in support. Others request the deletion of the policy, including Central Plains Water and Fonterra. Irrigation NZ seeks part (b) of Policy 11.4.13 be deleted. All the submitters requesting the policy be deleted request the inclusion of a method to develop good management nitrogen and phosphorus loss rates.

11.116 Ellesmere Irrigation Society seeks to amend Policy 11.4.13 to read:

"From 1 January 2017, further reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from farming activities in the catchment by requiring farming activities to:

(a) Implement a Farm Environment Plan prepared in accordance with Schedule 7 Part A, where a property is greater than 50 hectares; and

(b) Where a property's nitrogen loss calculation is greater than ~~15~~ 20 kg of nitrogen per hectare per annum, meet the Good Management Practice Nitrogen and Phosphorus Loss ~~Rates~~ for the property's ~~baseline land use~~."

11.117 Federated Farmers seeks to delete Policy 11.4.13 and replace it with the following:

"By 01 July 2016 include by way of a plan change a schedule of maximum nitrogen loss rates for farm activities on soil types within the catchment, which properties or farm enterprises must comply with by 2022; or If no such schedule exists then from 01 July 2017 limit the loss of nitrogen-nitrates from farming activities which are estimated using OVERSEER® to exceed 15kg per hectare per annum or 20kg per hectare per annum on areas shown on Planning Map XX as light or very light soils in the following way:

(i) Avoid any increase in estimated nitrogen loss from any property or farm enterprise where estimated nitrogen loss using OVERSEER® is greater than 15kg per hectare per annum or 20kg per hectare per annum in areas shown on Planning Map XX as light or very light soils;

(ii) Require properties or farm enterprises where nitrogen loss is estimated using OVERSEER® to exceed 15kg per hectare per annum or 20kg per hectare per annum in areas shown on Planning Map XX as light or very light soils, to develop and

implement a nitrogen reduction plan using Best Practicable Options to reduce their nitrogen losses; and

(iii) By 2037, avoid any property or farm enterprise having nitrogen losses estimated using OVERSEER® which exceeds 80kg per hectare per annum."

11.118 Rules 11.5.8 and 11.5.9 attracted a number of submissions. Several submitters support the rules, including Balance Agri-Nutrients, Fish and Game and Canterbury District Health Board. The majority of submitters seek amendments as discussed below.

11.119 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks the following amendments to Rule 11.5.8:

"11.5.8 From 1 January 2017, the use of land for a farming activity in the Selwyn Waihora catchment is a ~~permitted~~ Restricted Discretionary activity, provided the following conditions are met:

~~1. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum; and~~

1. The farming activity is greater than 50 hectares in area; and

~~2. A Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 10 hectares within the Lake Area in the Cultural Landscape/Values Management Area, and is supplied to Canterbury Regional Council on request; and~~

2. The farming activity is not located within the Cultural Landscape/Values Management Area; and

3. A Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 ~~Part A for all properties greater than 50 hectares, and is supplied to Canterbury Regional Council on request;~~

~~4. For properties less than 50 hectares but greater than 20 hectares:~~

~~(a) Until 31 December 2021, the Practices in Schedule 24 are being implemented; and~~

~~(b) From 1 January 2022, a Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A.~~

4. The farming activity is not irrigated with water from an irrigation scheme.

The exercise of discretion is restricted to the following matters:

1. The quality of and compliance with the Farm Environment Plan; and

2. The effects of the activity on Ngāi Tahu Cultural Values; and

3. Stock exclusion from waterways; and

4. Whether the farming activity is meeting the nitrogen loss calculation, calculated using the Matrix of Good Management or some alternative method approved by Environment Canterbury; and

5. The potential benefits of the activity to the applicant, the community and the environment".

11.120 Several submitters, as discussed above, seek an increase in the 15 kg/ha/pa nitrogen threshold or the property size thresholds triggering this rule regime.

11.121 A number of submitters, including G Bonniface, Ellesmere Irrigation Society, Nga Rūnanga and Te Rūnanga O Ngāi Tahu, seek to delete condition 4. The Baxter Family submits in opposition to any extra requirements in the Cultural Landscapes Values Management Area.

11.122 Balance Agri-Nutrients seeks that Conditions 2, 3 and 4 be retained. Throughout the Variation, the submitter supports the staged introduction of farm environment plans.

11.123 Federated Farmers seeks to amend Rule 11.5.9 condition 1 to read:
"*The nitrogen loss calculation for the property exceeds the applicable rate for nitrogen loss shown in Table XX, or if there is no applicable rate in Table XX, the estimated nitrogen loss rates exceed 15kg per hectare per annum, or 20kg per hectare per annum as areas shown on the planning maps as light or very light soils; and…*"

11.124 Federated Farmers also seeks to amend Rule 11.5.9, matter of discretion 3 to read: "*Methods to achieve nitrogen reductions from the property in accordance with Policy 11.4.13.*"

11.125 Fonterra and Dairy NZ seek to amend Rule 11.5.9 to delete matters of discretion 2 and 3 and replace them with a new matter to apply, at least until such time as the Good Management Practice Nitrogen and Phosphorus Loss Rates and associated reduction strategy are introduced to the pLWRP (whereby matters of discretion might also be reviewed). The new matter reads:
"3. The nitrogen and phosphorus management practices used and the potential for, and feasibility of improving those management practices or adopting new and additional management practices".

11.126 Synlait opposes matters of discretion 1 and 2. Irrigation NZ seeks deletion of matters of discretion 2, 3, and 4. Ellesmere Irrigation Society seeks condition 3 and reference to Table 11(i) be deleted.

11.127 Balance Agri-Nutrients seeks that Condition 2 be retained. The submitter supports the staged introduction of farm environment plans.

11.128 There is presently a joint project underway between the CRC and a number of industry groups to identify the good management practice discharge rates for different farming activities within different areas and climatic conditions of the region. This is often known as the "Matrix of Good Management" or "MGM" project. The project is due to deliver outcomes in 2015, and there is a commitment in Policy 4.11 of the pLWRP to incorporate this into the nutrient management regime, through a plan change, when the outcomes of that project become available.

11.129 A number of submitters seek that the Matrix of Good Management be published by the end of 2015, including Canterbury Grasslands Group, A & S Rayne, Ellesmere Transport, and H & R Oakley.

11.130 In addition, the pLWRP Objective 3.24 is also very relevant:

> *3.24 All activities operate at "good environmental practice" or better to optimise efficient resource use and protect the region's fresh water resources from quality and quantity degradation.*

11.131 A number of submitters have strongly requested a pause in this Variation 1 nutrient management regime until the outcomes of the above project are available. The view of those submitters appears to be that the outcomes of that project will be suitable for introducing as a plan change, and that the present region-wide provisions are adequate in the interim. From an efficiency perspective, that position may have merit, in that the region-wide provisions are relatively constraining on any increases in nutrient discharges at present (the sub-regional area is largely a "red" zone), and this would provide some certainty to farmers in the interim. The argument is strongly made in submissions from Federated Farmers, Dairy NZ, Fonterra, Beef + Lamb NZ.

11.132 In reality, until 2017, the region-wide and proposed sub-regional provisions are largely the same. The submitters appear more concerned with shaping the position with respect to the post-2017 framework, primarily through reducing the certainty in the policy position and rules.

11.133 In taking such an approach, a risk would remain that the project does not deliver an outcome suitable for inclusion as a plan change as a relatively simple exercise, and also that will be broadly accepted by most members of the farming and non-farming communities. In any event, there is likely to be a delay before such a significant plan change is settled.

11.134 The present Variation enables steps to be taken towards better managing nutrients in the catchment ahead of that plan change, and sets up a broad framework by which the plan change could be incorporated. However, it is clear that there are arguments both for and against delaying the process in the interim until more information is known about the MGM project presently underway. The risk in removing these provisions is that the direction established through the Zone Committee process will be lost, or at least not clearly signalled, and on-farm decisions may be made without a clearly defined future regulatory framework.

11.135 The alternative regime requested by many submitters is primarily to withdraw the substance of the nutrient management provisions until more science is completed and a future plan change eventuates. Overall, this position is not supported and would go against the considered outcomes of the CWMS Zone Committee process and the views of a significant number of submitters. It would also fail to meet Policy A2 of the NPSFM, particularly in terms of specifying targets and implementing methods within a defined timeframe:

> ***Policy A2***
> *Where water bodies do not meet the freshwater objectives made pursuant to Policy A1, every regional council is to specify targets and implement methods (either or both regulatory and non-regulatory) to assist the improvement of water quality in the water bodies, to meet those targets, and within a defined timeframe.*

Good Management Practice Nitrogen and Phosphorus Loss Rates Definition

11.136 The definition of Good Management Practice Nitrogen and Phosphorus Loss Rates reads:

> *means nitrogen and phosphorus loss rates (in kilograms per hectare per annum) from a property (including losses below the root zone of a property) for different soils, rainfall and farm type operating at good management practice.*

11.137 A number of submissions were received on the definition of Good Management Practice Nitrogen and Phosphorus Loss Rates. No submissions were received in support.

11.138 Southbank Dairies seeks to delete the definition of Good Management Practice Nitrogen and Phosphorus Loss Rates. Alternatively, Southbank Dairies requests a robust definition with specific requirements.

11.139 Specific requirements are requested in several submissions. For example, McKavanagh Holdings Ltd seeks to delete reference to good management practice and requests a definition with specific requirements which can be used for auditing farming operations. D Smith seeks tables detailing losses per soil type and land use activity.

11.140 Horticulture NZ seeks to amend the definition of Good Management Practice Nitrogen and Phosphorus Loss Rates by adding after "property" the words "or farming enterprise".

11.141 A number of submitters seek clarification of what the definition means for farmers. Ravensdown seeks clarification of how the loss rates will be determined. D Rankin seeks that the whole definition be reworded. Synlait Farms seeks a more robust definition that allows for some clear linkages on what these numbers may mean to businesses and communities.

11.142 NZ Pork request the inclusion of a separate definition for 'Good Management Practice'. And consequently, seek to amend Good Management Practice Nitrogen and Phosphorus Loss Rates to include "*…rainfall and farm type operating at Good Management Practice as defined in section 11.1A of this plan.*"

11.143 NZ Pork requests the definition of Good Management Practice to read as follows: "*Good Management Practice means industry derived standards as agreed under the Matrix of Good Management (MGM) Project, and consists of a suite of practices that are expected to be applied on farm.*"

11.144 Ballance Agri-Nutrients requests the following amendments: "*means nitrogen and phosphorus loss rates (in kilograms per hectare per annum) from a property (including losses below the root zone of a property) for different soils, rainfall and farm type operating at Good Management Practice, as set out in Schedule 24.*"

11.145 S Bruerton has concerns about the lack of measurable items for good management practice.

11.146 There are a number of issues regarding the certainty of setting future rule regimes, particularly when these are dependent on research work and decisions yet to be made.

11.147 The post-2017 regime requires compliance with good management practice nitrogen and phosphorus loss rates. A project to improve knowledge of what these are is currently underway. This has introduced a degree of uncertainty, particularly as submitters are unable, at this point, to know precisely what they are being committed to.

11.148 As with all modelling, the calculation of the overall catchment load limit and the ability of the policy and rule regime to meet that load limit in the future is based on a number of assumptions. Without a great deal of detail, the model and assumptions have been challenged by some submitters.

11.149 While a number of the limits and management criteria appear to be based around nitrogen discharges, the policy direction is clearly also to set limits with respect to phosphorus as well. At this stage, there is uncertainty regarding the ability to quantify phosphorus loss, and without additional research, tools and improved practices, it is difficult to commit to a future rule regime that goes beyond the Schedule 24 actions, stock exclusion, riparian management and farm environment plans.

11.150 There also appears to be considerable concern with the definition of Good Management Practice Nitrogen and Phosphorus Loss Rates. Given that there is already a commitment in Policy 4.11 such that "…good management practice will be codified and introduced into this Plan by way of a plan change on or before 30 October 2016", it is potentially more efficient and effective to wait for that process to develop a cohesive set of provisions, rather than introduce a definition ahead of the plan change.

Recommendation R Good Management Practice Nitrogen and Phosphorus Loss Rates

Delete the definition of Good Management Practice Nitrogen and Phosphorus Loss Rates.

Post 2022 Percentage Reductions in Discharges

Policies 11.4.14 and 11.4.15

11.151 Policy 11.4.14 reads:

> *11.4.14 From 1 January 2022, to achieve the water quality limits in Section 11.7.3 require farming activities to:*
>
> *(a) Implement a Farm Environment Plan prepared in accordance with Schedule 7 Part A, where a property is greater than 20 hectares; and*

(b) Where a property's nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum, make the following further percentage reduction in nitrogen loss rates, beyond those set out in Policy 11.4.13(b), to achieve the catchment target for farming activities in Table 11(i):

(i) 30% for dairy

(ii) 22% for dairy support; or

(iii) 20% for pigs; or

(iv) 13% for irrigated sheep, beef or deer; or

(v) 10% for dryland sheep and beef; or

(vi) 7% for arable; or

(vii) 5% for fruit, viticulture or vegetables; or

(viii) 0%for any other land use.

11.152 Policy 11.4.15 reads:

11.4.15 In circumstances where the reductions required in Policy 11.4.14(b) are unable to be achieved by 2022, any extension of time to achieve the reductions will be considered having regard to:

(a) The implications on achieving the catchment nitrogen load target in Table 11(i) by 2037; and

(b) The nature of any proposed steps to achieve the reduction; and

(c) The sequencing, measurability and enforceability of any steps proposed.

11.153 A large number of submissions were received on Policies 11.4.14 and 11.4.15. Policy 11.4.14 received a larger number of submissions, including in support from submitters such as A Harris, Te Taumutu Rūnanga, and Malvern Hills Protection Society. A number of the submissions request that Policy 11.4.14 be deleted including M Manson, M Bruce and Horticulture NZ. Three submitters request that Policy 11.4.15 be deleted. Several submitters request amendments to both policies.

11.154 A large number of submitters, including M Manson, S Thornley, J Townshend, F & R Lamborn, McKavanagh Holdings Ltd, and Irrigation NZ, request that the reference to percentages in Policy 11.4.14(b) be deleted as more science and analysis is required.

11.155 10.148 NZ Pork seeks to remove the percentages and amend the policy to include *"Levels of loss reduction required will be agreed between Environment Canterbury and agricultural sectors pending completion of the Matrix of Good Management Project, and directly related to the actual contribution of each sector to the overall nitrate loading of the catchment."*

11.156 Beef + Lamb NZ seeks to amend policy 11.4.14 (b)(iv) to 5% for irrigated sheep, beef, deer and 11.4.14 (b) (v) to 2% for dryland sheep, beef and deer. T Ferguson is opposed to any reductions for sheep and beef farmers. Ravensdown seeks amendments to 20% for dairy.

11.157 Fonterra and Diary NZ seek to delete Policy 11.4.14 and replace the provision with a commitment (in a method or advisory note) as follows:
"Following the confirmation of the good practice management nitrogen loss rates the Council will review the catchment nitrogen load limit, and develop a strategy for the reduction of nitrogen loss to comply with that limit over time. The means to achieve the

required reduction (including the reductions required from the nitrogen baseline for individual properties) will, in conjunction with the good practice management nitrogen loss rates, be introduced to the Plan by way of the First Schedule process".

11.158 A number of further submissions were received on Fonterra and Dairy NZ's submission on Policy 11.4.14. A large number of further submitters including KO Farm Ltd, Central Plains Water, and Horticulture NZ supported the deletion of the policy with a replacement commitment. Forest and Bird and Fish and Game opposed the submission point.

11.159 Dairy Holdings and Central Plains Water also request that Policy 11.4.14 be deleted and replaced by a method to commit to a future nitrogen reduction strategy.

11.160 Alternatively, Fonterra and Dairy NZ state "If Environment Canterbury does retain this provision the 30% reduction in nitrogen loss from dairy farms over an eight-year period should be reconsidered with a more manageable reduction rate applied (after more comprehensive cost analysis)."

11.161 Federated Farmers seeks to replace Policy 11.4.14 with the following:
"Policy 11.4.14 Require properties and farm enterprises to develop and implement Farm Environment Plans in accordance with Schedule 7, Part A to assist in managing reductions in discharges as follows:

(i) Any property or farming enterprise within the 'Te Waihora Cultural Landscape Values Management Area' and greater than 10 hectares in area is to implement a Farm Environmental Plan to minimise the risk of discharging phosphorous, sediment, microbial contaminants and other contaminants to water by 1 January 2016.

(ii) Any property or farming enterprise within the areas zoned 'Phosphorous Sediment Risk Area' on the planning maps is to implement a Farm Environmental Plan to minimise the risk of discharging phosphorous, sediment and microbial contaminants to water by 1 January 2017 if the property or farm enterprise is greater than 50 ha in size or by 01 January 2020 if the property or farm enterprise is between 10 and 50 hectares in size.

(iii) Any property or farming enterprise located within the areas Zoned Nitrate Loss Risk Area and has a nitrogen baseline that exceeds 15kg per hectare per annum, or 20kg per hectare per annum in areas shown on Planning Map XX as light or very light soils, is to implement a Farm Environmental Plan to minimise the discharge of nitrogen-nitrates by 01 January 2017 if the property or farm enterprise is greater than 50 hectares in size or by 01 January 2021 if the property or farm enterprise is between 10 and 50 hectares in size.

11.162 Ravensdown seeks clarification on how the nitrogen baseline will apply to Policy 11.4.15 and a clarification of the timing to reduce discharge. The submitters supports the overall intent of the policy in regards to a time extension.

11.163 NZPork seeks to amend Policy 11.4.15 to align with the proposed amendments to the NPSFM by adding: "*(d) Any implications on the resource user, people or community, including social and economic implications.*"

11.164 Fonterra and Dairy NZ seek to delete Policy 11.4.15. Alternatively, the submitters seek amendments to Policy 11.4.15 so that the extent and pace of reductions in nitrogen loss (from the Good Management Practice Nitrogen and Phosphorus Loss Rates) post 1 January 2022 is determined having regarded to (in addition to the matters listed in Policy 11.4.15):

- The nitrogen baseline for nitrogen loss and the loss reduction history on farm;
- Any geophysical conditions and constraints (that may not be taken into account in the Good Management Practice Nitrogen and Phosphorus Loss Rates) that restrict or limit the effectiveness of nitrogen reduction options;
- The extent and age of existing infrastructure on farm and the opportunity for further infrastructure investment to achieve reductions in nitrogen loss; and
- The capital and operating cost associated with achieving the reduction.

11.165 The technical reporting on the path to achieve the nitrogen target, along with the Zone Committee part of this Section 42A Report, identify that there is a need to establish, at a farm level, what good management practice is, ensure all farms are achieving good management practice, and then reduce nitrogen discharges someway between good management practice and the maximum feasible mitigation. While this is a significant paraphrasing of the technical and Zone Committee process, it underlies a significant part of the policy positioning of nutrient management in Variation 1, and has been subject to a very significant number of submissions.

11.166 At the broadest level of summarising, it would appear that in order to meet the long term target for nitrogen discharges, there is a need to reduce discharges by approximately 12.5% across the board beyond the reduction that would be achieved through good management practice. As there are thresholds below which nutrient management is not specifically required, such as the 15 kg/ha/pa limit, the overall reduction across existing farms is more in the order of 20%. The Zone Committee considered how best to divide this amongst the various industries, upon an understanding that it was easier for some industries to reduce discharges than others.

11.167 At the outset, it is recognised that reduction in nutrient emissions, beyond good management practice, is not cost neutral. It does cause a notable loss of profitability, all other things being equal. The Zone Committee approach, in consultation with industry groups, was to "share the pain equally" whereby a roughly equal loss of profitability across the various sector groups would be countenanced, leading to differing requirements for reductions beyond good management practice. This, and the resulting overall policy and rule position, is explained fully in the Section 32 Report.

11.168 Beef + Lamb NZ's request to alter the percentages for irrigated sheep, beef, deer and for dry land sheep, beef and deer are something of a special case, as I understand it is acknowledged that errors were made and have been acknowledged by the authors of the reports that arrived at these percentages. It is understood that the percentages in the Beef

+ Lamb NZ submission are correct, and therefore the Beef + Lamb NZ percentages are recommended to be included for dryland and irrigated sheep, beef and deer.

11.169 It would appear that there is significant disagreement between the industries as to whether good management practice is enough, how the reductions in nutrient discharges should be spread and at whose cost. A significant number of submitters suggest that it is too early to set percentages, such as has been done in Policy 11.4.14, on the basis that it is nearly a decade away, things will change over that time, the reduction in nitrogen and profitability loss from good management practice is not yet known and overall, there are too many uncertainties.

11.170 While there is disagreement shown in the submissions, the analysis completed for this Variation has shown that there is a clear need, in order to meet the nitrogen loss limits, to reduce nitrogen losses below the level established under good management practice alone. Scenarios of continuing with the current on-farm performance level and good management practice are fully described in the technical reporting (see summary in the technical reporting section of this Section 42A Report and in the other documents referred to therein). Some submitters, without setting out any detailed relief (other than deletion of this policy), have challenged the technical research upon which Variation 1 is based and the positions reached by the Zone Committee.

11.171 A policy position requiring that substantial further reductions of nitrogen losses (20%) beyond good management practice, will be required for each farm in the future to meet the nitrogen loss target could be an alternative to listing percentages for different industries. The risk of this approach is that it does not put industries "on-notice" about the likely future position, and therefore may encourage additional investment that does not account for the regulatory uncertainty. It also would not allow the setting of longer-term nutrient loss limits in resource consents, requiring more frequent reviews and consequent uncertainty.

11.172 As noted above, some submitters have highlighted uncertainty as a reason not to be as specific in Policies 11.4.14 and 11.4.15. The RMA requires an assessment, pursuant to section 32 of "the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions." While there is uncertainty, the risks of not acting significantly outweigh the risks of acting. There are two matters that support this conclusion:

1. the Zone Committee has highlighted that there a need for the complete package of actions, including a range of non-regulatory actions and mitigations, to be undertaken in order for the target to be met.
2. the pLWRP, RPS and NPSFM set out a clear framework whereby outcomes will be established, limits (or targets) to meet the outcomes, and in the case of targets, a defined regulatory and non-regulatory path to get to the target.

11.173 Overall, in the absence of an alternative path set out by the submitters that will still enable the target to be met, it is recommended to maintain the present policy framework.

Enabling the Central Plains Water Scheme

Policy 11.4.17 and Rules 11.5.14, 11.5.15 and 11.5.17

11.174 Policy 11.4.17 reads:

11.4.17 To achieve the farming activity water quality targets in Section 11.7.3 require all farming activities within the command area of any Irrigation Scheme listed in Table 11(j), where they are irrigated with water from the Scheme:

(a) To collectively not exceed the Irrigation Scheme Nitrogen Limits in Table 11(j); and

(b) Where properties convert from dry land to irrigated land use, the nitrogen loss rates from the outset shall be managed in accordance with Policy 11.4.14(b).

11.175 Rule 11.5.14 states:

11.5.14 Despite any of Rules 11.5.2 to 11.5.13, the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity provided the following conditions are met:

1. The property is irrigated with water from an irrigation scheme and the discharge is a permitted activity under Regional Rule 5.61; or

2. The property is irrigated with water from an Irrigation Scheme listed in Table 11(j) and the irrigation scheme holds a discharge consent under Rule 11.5.15.

11.176 Rule 11.5.15 states:

11.5.15 The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA, in the Selwyn Waihora catchment, is a discretionary activity, provided the following conditions are met:

1. The applicant is an Irrigation Scheme listed in Table 11(j); and

2. The nitrogen loss calculation for the Scheme will not exceed the Irrigation Scheme Nitrogen Limits in Table 11(j).

11.177 Rule 11.5.17 states:

11.5.17 The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA, in the Selwyn Waihora catchment and does not meet Rule 11.5.15 or Rule 11.5.16 is a non-complying activity.

11.178 Table 11(j) reads:

Table 11(j): Irrigation Scheme Nitrogen and Phosphorus Limits

Irrigation Scheme	Tonnes of nitrogen per year	
	From 1 January 2017	From 1 January 2022
Central Plains Water	1944	1742

11.179 A number of submissions were received in relation to enabling Central Plains Water. Several submissions received were in general support. Requests for amendments, especially to reduce restrictions on Central Plains Water, were more common.

11.180 Overall, Central Plains Water seeks amendments to Variation 1 that ensure there is no conflict between the outcomes anticipated and the compliance obligations recorded in the Central Plains Water consents.

11.181 Central Plains Water and Dairy Holdings seek to amend Policy 11.4.12 paragraph one to read: "*Reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from farming activities in the catchment by requiring farming activities on land that is not irrigated with water from an Irrigation Scheme to:...".*

11.182 Policy 11.4.17 received requests seeking deletion of 11.4.17(b) from submitters such as Irrigation NZ, Fonterra, Dairy NZ and Central Plains Water.

11.183 Rule 11.5.14 also received a number of submissions requesting amendments including:

11.184 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks to amend Rule 11.5.14 by including "farming enterprise" within conditions (1) & (2):

1. *The ~~property~~ farming activity or farming enterprise is irrigated with water from an irrigation scheme and the discharge is a permitted activity under either Regional Rule 5.61 or Rule 5.62; or*
2. *The ~~property~~ farming activity or farming enterprise is irrigated with water from an Irrigation Scheme listed in Table 11(j) and the irrigation scheme holds a discharge consent under Rule 11.5.15.*

11.185 Central Plains Water seeks to amend Rule 11.5.14 as follows:

"Despite any of Rules 11.5.2 to 11.5.13, the use of land for a farming activity in the Selwyn-Waihora catchment is a permitted activity provided the following conditions are met:

1. There is an existing consent, held by an irrigation scheme or a principal water supplier, that has conditions that specify the maximum amount or rate at which nutrients may be discharged or leached from the subject land; or

2. ~~The property is irrigated with water from an irrigation scheme and the discharge is a permitted activity under Regional Rule 5.61; or~~

2. The property is irrigated with water from an Irrigation Scheme listed in Table 11(j) and the irrigation scheme holds a discharge consent under Rule 11.5.15".

11.186 Horticulture NZ seeks to amend Rule 11.5.15 (1) and (2) by deleting "listed in Table 11 (j)". The submitter interprets the rule as requiring any future irrigation scheme to require a plan change to be listed in the plan. Similarly, The Crossing Ltd seeks recognition of other irrigation schemes and the same flexible management framework as applied to Central Plains Water.

11.187 Central Plains Water seeks clarification of the relationship between Rules 11.5.14 to 11.5.17. Central Plains Water states some of the rules have the same wording and exactly the same status.

11.188 Central Plains Water seeks to amend Rule 11.5.15 to read: "*From 1 January 2017, the discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA, in the Selwyn-Waihora catchment, is a ~~discretionary~~ controlled activity, provided the following conditions are met:*

1. *The applicant is an Irrigation Scheme listed in Table 11(j); and*
2. *The nitrogen loss calculation for the Scheme will not exceed the Irrigation Scheme Nitrogen Limits in Table 11(j).*"

11.189 S Thornley seeks to delete reference to Table 11(j) or amend to include *"or other figures as can be reasonably and accurately calculated by improved modelling or other approved calculation techniques."*

11.190 Some submitters request clarification of the heading of the table as no phosphorus limits are provided, including the Director General of Conservation. Dairy NZ and Fonterra seek amendment to "*Table 11(j): Irrigation Nitrogen Limits*".

11.191 Fish and Game requests that phosphorus limits are added to the table. Five further submitters are opposed to this submission, including Ravensdown and Fonterra.

11.192 Central Plains Water and Diary Holdings seek that the allocations be corrected to remove any errors and to ensure that they are reasonable. Central Plains Water also state that the number may need to be increased to take into account the inclusion of the Glenroy Scheme but no number is provided. Overall, Central Plains Water seeks an "effective nutrient allocation regime" for irrigation schemes. The submitter states that there is no policy direction as to how nutrients are to be allocated within the properties an irrigation scheme services, particularly when some of the properties are already irrigated.

11.193 A number of submitters seek clarity regarding the "Matrix of Good Management" in relation to Table 11(j). This is discussed in detail earlier in this Section 42A Report. McKavanagh Holdings Ltd, R Booth, T & L Cookson, and Southbank Dairies seek to delete that table and replace it with a method requiring Council to commit to the development of Good Practice Nitrogen and Phosphorus Loss Rates.

11.194 The framework within the Variation is similar to the framework for managing farming nutrient discharges within irrigation schemes in the region-wide provisions of the pLWRP. The region-wide provisions envisage some form of management at a scheme level, whereby the scheme will be responsible for the administration of nutrient discharges from the shareholders, usually within the terms of a resource consent held by the irrigation company that will contain an overall limit. In the case of the Selwyn Te Waihora sub-regional section, that limit is proposed to be contained within Table 11(j). There is an attractiveness in the

consistency of the overall approach, particularly at this early stage of implementation of the pLWRP regime.

11.195 Objectives 3.4, 3.5 and 3.11 of the pLWRP are also very relevant:

> *3.4 A regional network of water storage and distribution facilities provides for sustainable, wise efficient and multiple use of water.*
>
> *3.5 Land uses continue to develop and change in response to socio-economic and community demand while remaining consistent with the CWMS targets.*
>
> *3.11 Water is recognised as an enabler of the economic and social wellbeing of the region.*

11.196 There are a considerable number of submissions both for and against enabling the Central Plains Water scheme. These submissions are generally well argued on both sides.

11.197 Principle arguments for enabling Central Plains Water include the recognition of the granted, but unimplemented, resource consents for the scheme, signalling that an "allocation" of nutrient discharges has already occurred, the consideration of nutrient discharges as part of that process and the considerable investment in the scheme that has occurred to date.

11.198 There are two principle arguments against the Central Plains Water scheme in the submissions. The first is that fundamentally the Selwyn Te Waihora sub-regional area is already substantially over-allocated with respect to nutrients. In the light of this, enabling additional nutrients to be discharged is questioned. Secondly, a number of submitters that are not shareholders in the Central Plains Water scheme (they are outside the command area or are not considering up taking shares), are concerned at the equity issues relating to a requirement to reduce nutrient losses, at some cost to the individual farmer, so that an increased discharge can be enabled within the Central Plains Water command area. Essentially, there is a concern at wealth transfer through a regulatory regime.

11.199 The submissions on including rules to manage irrigation schemes, and a specific limit for the Central Plains Water Scheme in Table 11(i), have attracted a number of submissions, both in support and in opposition. Some submissions, such as those from the Central Plains Water, have requested a removal of controls on Central Plains Water, noting that there are already resource consents in place that manage nutrient discharges from the scheme. It is understood that primarily those controls in the relevant consents place a limit on the discharges in terms of concentration in water and require a number of mitigations such as farm environment plans, rather than an overall limit for the scheme.

11.200 Other submitters generally support the Central Plains Water scheme and request fewer limitations upon it, such that it can be established and become a significant enabler of social and community and economic wellbeing. Other submitters generally oppose the specific allocation to Central Plains Water.

11.201 Some of these submitters identify that they are either within the command area and do not own shares, or are outside the command area and are opposed to the inequity of having to improve their processes, beyond good management practice and at considerable cost, such that the "saved" nutrient discharges can be re-allocated to another party for their private gain. Some submitters are clearly opposed to the Central Plains Water scheme as a whole, and nutrient discharges are merely one more issue.

11.202 While no particular recommendations are made, the potential disjoint between the present over-allocated status of the catchment with respect to nutrients, and the likely addition of further nutrient into the catchment through the introduction of a significant irrigation scheme is noted. The outcomes of the Zone Committee process, including the balance of regulatory and non-regulatory actions informed by science and social and cultural analysis, is considered, at this point, to be a reasonably robust position.

Reliance on Non-regulatory Mitigation Actions

Regional Policy Statement

11.203 Policy 7.3.3 of the RPS, set out below, provides a broad framework, along with the pLWRP, for the use of non-regulatory methods to assist with achievement of improvements in the quality and quantity of water and protection of cultural values. A number of the activities listed in the policy have been incorporated into the Zone Committee's package of actions, and the integrated nature of the package is described fully in the Zone Committee section of this Section 42A report.

Policy 7.3.3 *Enhancing fresh water environments and biodiversity*

To promote, and where appropriate require the protection, restoration and improvement of lakes, rivers ,wetlands and their riparian zones and associated Ngāi Tahu values, and to:

(1) identify and protect areas of significant indigenous vegetation and significant habitats, sites of significant cultural value, wetlands, lakes and lagoons/hapua, and other outstanding water bodies; and

(2) require the maintenance and promote the enhancement of indigenous biodiversity, inland basin ecosystems and riparian zones; and

(3) promote, facilitate or undertake pest control.

Policies 11.4.18 and 11.4.19 and Rules 11.5.44 and 11.5.45

11.204 Policy 11.4.18 reads:

11.4.18 Enable lake restoration activities that re-establish aquatic plants, lake margin wetlands and remove phosphorus from lake bed sediments in Te Waihora/Lake Ellesmere.

11.205 Policy 11.4.19 states:

11.4.19 Enable catchment restoration activities that protect springheads, protect, establish or enhance plant riparian margins, create restore or enhance wetlands and target removal of macrophytes or fine sediment from waterways.

11.206 Rule 11.5.44 states:

11.5.44 Within the Selwyn Waihora catchment the taking and use of water from a river and the disturbance of the bed of a river to remove fine sediment less than 2 mm in diameter for the sole purpose of habitat restoration is a restricted discretionary activity provided the following conditions are met:

1. *A management plan has been prepared and submitted to the Canterbury Regional Council that includes the location and method of sediment removal and disposal, an inventory of sensitive ecological habitats and species, and an assessment of the environmental risks and how adverse effects will be avoided or mitigated; and*
2. *The activity does not occur when the river is at or below the minimum flow in Table 11(c); or*
3. *Any abstracted water is returned to the river not more than 250 m from the point of take following removal of fine sediment; and*
4. *The maximum instantaneous rate of water abstraction shall not exceed 50% of the flow in the stream at the site being remediated; and*
5. *The activity does not take place on a site listed as an archaeological site on the New Zealand Archaeological Association Site Recording Scheme website; and*
6. *The activity is not undertaken within a Group or Community Drinking Water Protection Zone as listed in Schedule 1; and*
7. *The activity is undertaken more than 50 m from any lawfully established surface water intake.*

The exercise of discretion is restricted to the following matters:

1. *The location, method and timing of sediment removal with respect to the life stage and habitat of sensitive ecological communities including fish and invertebrates; and*
2. *The adverse effects of the activity on downstream water quality, flows and significant habitats of indigenous fauna and flora; and*
3. *The effect of the activity on reliability for any authorised surface water take; and*
4. *The volume and rate at which water is abstracted and returned to the river; and*
5. *The adverse effects of the activity on sites used for freshwater bathing in Schedule 6; and*
6. *Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area; and*
7. *The benefits of the activity to the applicant, community and the environment.*

11.207 Rule 11.5.45 reads:

11.5.45 Within the Selwyn Waihora catchment the taking and use of water from a river and the disturbance of the bed of a river to remove fine sediment less than 2 mm in diameter for the sole purpose of habitat restoration that does not meet one or more of the conditions in Rule 11.5.44 is a discretionary activity.

11.208 A limited number of submissions were received on the policies and rules relating to non-regulatory methods.

11.209 Fonterra and Dairy NZ request that methods be included in the Variation that support development of a catchment strategy and implementation plan to, in particular, identify critical source areas for reducing phosphorus and sediment loss. The submitter states that policies 11.4.18, 11.4.19 and 11.4.20 [restoration activities] do not provide an indication of when or how, these activities are to be delivered and considers that the Variation could go some way further in this regard.

11.210 Forest and Bird seeks to amend policy 11.4.19 to provide clarity around how these policies will be enabled and the role Council will have.

11.211 A small number of submissions were received on Rule 11.5.44. Two were in support, from Fish and Game, and Forest and Bird. Fish and Game supported Rule 11.5.45.

11.212 Christchurch CC seeks to amend Rule 11.5.44 as follows: "*Within the Selwyn-Waihora catchment the taking and use of water...is a restricted discretionary activity provided the following conditions are met: 1. A management plan has been prepared and submitted to the Canterbury Regional Council that includes the location and method of sediment removal, management and disposal, erosion control methodology, an inventory of sensitive ecological habitats and species, and an assessment of the environmental risks including effects downstream, and how...*" (other conditions not amended).

11.213 Forest and Bird seeks to amend Rule 11.5.44, matter of discretion 7 to read "*The benefits of the activity to the ~~applicant~~, community and the environment.*"

11.214 Fundamentally, the evidence and research would suggest that the Selwyn Te Waihora catchment is over-allocated with respect to nutrients. The outcomes set for the lowland water bodies and the lake are not presently being met, and therefore regulatory and non-regulatory interventions are required to meet those outcomes.

11.215 The rules and limits in the Selwyn Te Waihora Variation 1 will not, of themselves, achieve those outcomes. The achievement of those outcomes, as set out within the ZIP Addendum clearly requires the implementation of a significant number of mitigation measures.

11.216 These mitigation measures will take many years to implement, some are uncertain as to their acceptability, and many are subject to trial and methodology development as they are somewhat experimental. Underlying all of these issues, the mitigation mechanisms require a very significant investment of funds.

11.217 The inherent risk is that without the mitigation measures being implemented, and being successful, the outcomes set out in Variation 1 will not be achieved.

11.218 A number of submitters request that the non-regulatory mitigation actions be included within either this Variation or some other form of catchment management plan, such that there are far more specifics around timeframes, implementation methods and costs. Information has been provided elsewhere in this Section 42A Report regarding the CRC's commitment to the non-regulatory mitigations. It is acknowledged that the outcomes will not be met without various other non-regulatory actions being undertaken, as has been explained in the Zone Committee Section of this Section 42A Report. This is anticipated in Policy A2 of the NPSFM, where it states "*…implement methods (either or both regulatory and non-regulatory) to assist the improvement of water quality in the water bodies, to meet those targets, and within a defined timeframe.*"

11.219 Some benefit could certainly occur through the specific listing of the non-regulatory actions, possibly with some linkage to the need for further regulatory actions, including alteration of targets and further mitigation of nitrogen losses, if the non-regulatory actions do not occur. However, simply listing them in Section 11 of the pLWRP will not provide any certainty that they will occur – the listing of them would be to assist with clarity that both regulatory and non-regulatory actions need to occur in order to meet the outcomes.

11.220 The risk that some non-regulatory actions may not occur is clearly present, particularly with those non-regulatory actions that rely on further consenting or approval of land owners. This includes the actions such as reduction in the phosphorous in the bed of Te Waihora/Lake Ellesmere, which is clearly not a simple exercise from RMA, property rights and cultural perspectives. In addition, actions such as the fencing and planting of the margins of waterways, including rivers and drains, will require investment by individuals as well as long term management.

11.221 While only a small number of submissions have been lodged with respect to these rules, the changes requested by the Christchurch City Council and Forest and Bird appear to be reasonable and are recommended to be accepted, so that the rules become clearer and more certain. With respect to the Forest and Bird suggested amendment, it is accepted that the removal of sediment is for a wider community benefit, therefore the community and ecological benefits are more relevant than the benefits directly to the applicant.

Recommendation R 11.4.18

Retain Policy 11.4.18 without amendment.

Recommendation R 11.4.19

Retain Policy 11.4.18 without amendment.

Recommendation R 11.5.44

Amend Rule 11.5.44 to read:

11.5.44 Within the Selwyn Waihora catchment the taking and use of water from a river and the disturbance of the bed of a river to remove fine sediment less than 2 mm in diameter for the sole purpose of habitat restoration is a restricted discretionary activity provided the following conditions are met:

1. *A management plan has been prepared and submitted to the Canterbury Regional Council that includes the location and method of sediment removal, management and disposal, erosion control methodology, an inventory of sensitive ecological habitats and species, and an assessment of the environmental risks including effects downstream;*[138] *and*
2. *The activity does not occur when the river is at or below the minimum flow in Table 11(c); or*
3. *Any abstracted water is returned to the river not more than 250 m from the point of take following removal of fine sediment; and*
4. *The maximum instantaneous rate of water abstraction shall not exceed 50% of the flow in the stream at the site being remediated; and*
5. *The activity does not take place on a site listed as an archaeological site on the New Zealand Archaeological Association Site Recording Scheme website; and*
6. *The activity is not undertaken within a Group or Community Drinking Water Protection Zone as listed in Schedule 1; and*
7. *The activity is undertaken more than 50 m from any lawfully established surface water intake.*

The exercise of discretion is restricted to the following matters:

1. *The location, method and timing of sediment removal with respect to the life stage and habitat of sensitive ecological communities including fish and invertebrates; and*
2. *The adverse effects of the activity on downstream water quality, flows and significant habitats of indigenous fauna and flora; and*
3. *The effect of the activity on reliability for any authorised surface water take; and*
4. *The volume and rate at which water is abstracted and returned to the river; and*
5. *The adverse effects of the activity on sites used for freshwater bathing in Schedule 6; and*
6. *Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area; and*
7. *The benefits of the activity to the ~~applicant~~*[139]*, community and the environment.*

Recommendation R 11.5.45

Retain Rule 11.5.45 without amendment.

[138] V1pLWRP-946 - Christchurch City Council
[139] V1pLWRP-1323- Forest and Bird

Farm Environment Plans and Schedule 24 Actions

Schedule 7

11.222 The amendment to Schedule 7 reads:

Schedule 7 – Farm Environment Plan

Within the Selwyn Waihora catchment Part B clause 2 shall include the following additional matter:

(1) The location of any known mahinga kai, wāhi tapu or wāhi taonga within any property located in the Cultural Landscape/Values Management Area.

Within the Selwyn Waihora catchment Part B clause 5(a) shall also include following:

- *Curtail the loss of phosphorus and sediment loss rate within the Phosphorus and Sediment Risk Zone.*
- *Achieve the Good Management Practice Nitrogen and Phosphorus Loss Rates from 2017.*
- *Further reduce nitrogen loss rate from 2022, where a property's nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum.*

11.223 Ellesmere Irrigation Society Inc seeks to delete Policy 11.4.12(c) to remove the reference to Farm Environment Plans in the Cultural Landscape/Values Management Area.

11.224 I Upston and M Bruce generally seek no additional/lower compliance costs. KO Farm Ltd seeks amendments to allow for voluntary farm environment plans, particularly for farms less than 50 ha in size.

11.225 Balance Agri-Nutrients supports the staged introduction of farm environment plans.

11.226 Te Taumutu Rūnanga and Waihora Ellesmere Trust request the timeframe of July 2015 for farms in the Cultural Landscape/Values Management Area be extended to 2016 because they consider it to be a more realistic time frame. B Hutchinson seeks an extended timeframe (not specified). Beef + Lamb NZ request amendments to provide for a reasonable timeframe for the creation of farm environment plans after the result of the "Matrix of Good Management" is complete. G Bonniface requests longer timeframes for farm environment plans, in order to provide for limits that are not yet set.

11.227 McKavanagh Holdings supports the retention of farm environment plans as a mechanism.

11.228 Conversely, J Demeter seeks less reliance on farm environment plans and more reliance on good management practice. Beef + Lamb NZ also submits in opposition stating that farm environment plans should only be required where there are benefits in managing contaminant loss issues – the implication being that farms with low nitrogen loss tend to have fewer benefits from implementing farm environment plans.

11.229 Te Taumutu Rūnanga seeks to retain the amendments to Schedule 7 and seeks additional requirements for farm environment plans in the Cultural Landscape/Values Management

Area. The Rūnanga seeks a system whereby the Rūnanga is involved in annual reviews of the farm environment plans.

11.230 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seek to amend Schedule 7 Part B of the pLWRP by including the following matters or inserting a new Schedule within Selwyn-Te Waihora Section which incorporates all matters within the existing Schedule 7 and the following additional matters"

Additional matters Part B under "The Plan shall contain as a minimum:..."

"The location of any tracks including any water tables, swales etc. which are used to convey stormwater;

The location of farm infrastructure for example wool sheds, yards, feed pads, dairy shed etc.

***"New Section - Risk Assessment** A site specific environmental risk assessment undertaken by an independent person, which clearly identifies any risks to the environment from the farming operation and set out measures which could avoid such risks.*

***"New Section – Irrigation Management** A description of how the irrigation system will:*

(a) All irrigation systems installed or replaced after 1 January 2014 meet the Irrigation New Zealand Piped Irrigation Systems Design Code of Practice [2013], Irrigation New Zealand Piped Irrigation Systems Design Standards [2013] and the Irrigation New Zealand Piped Irrigation Systems Installation Code of Practice [2013].

(b) The irrigation system application depth and uniformity are self-checked annually in accordance with the relevant Irrigation NZ Pre-Season Checklist and IRRIG8Quick Irrigation Performance Quick Tests for any irrigation system operating on the property.

(c) Irrigation applications are undertaken in accordance with property specific soil moisture monitoring, or a soil water budget, or an irrigation scheduling calculator.

(d) Records of irrigation system application depth and uniformity checklists, irrigation applications, soil moisture monitoring or soil water budget or irrigation scheduling calculator results and rainfall are kept and provided to the Canterbury Regional Council upon request.

(5) (a) Nutrient management: ~~To maximise nutrient use efficiency while minimising nutrient losses to water~~ Practices to be implemented over a specified timeframe which will ensure that the discharge is not more than the nitrogen/phosphorus discharge loss rate as calculated using either the Matrix of Good Management or an alternative method; and practices to be implemented over a specified timeframe which will ensure the discharges are reducing towards achieving a discharge loss of no more than a 15kg/ha/year

(x) Wetlands and riparian management: To manage wetland and waterway margins to avoid damage to the bed and margins of a water body, avoid direct input of nutrients, and to maximise riparian margin nutrient filtering.

(x) On farm land drainage: Identify and implement methods for addressing the effects on water quality from land drainage water

(x) Stock exclusion from waterways: measures to be implemented to ensure that stock are excluded from all waterways, including, how stock access to intermittently flowing waters will be managed.

(x) Wintering management: To manage the risks of wintering practise to avoid sediment run-off from or increasing nutrient loss as a result of wintering practises."

11.231 Four further submissions were received from Fonterra, Ellesmere Irrigation Society Inc, Dunsandel Groundwater Users Group and Central Plains Water in opposition of the above amendment.

11.232 Nga Rūnanga and Te Rūnanga o Ngāi Tahu also seek a new schedule that seeks out the information required to enable OVERSEER. The submitter seeks to amend the Variation to include a new schedule which enables OVERSEER to be run. This is particularly opposed in a further submission from the Fertiliser Association of New Zealand.

"Schedule X – Information to be kept

(a) The site area to which the farming activity or farming enterprise relates;

(b) Monthly stocking rates (numbers, types and classes) including breakdown by stock class;

(c) Annual yield of arable or horticultural produce;

(d) A description of the farm management practices used on each block including:

(i) Ground cover – pasture, crops, fodder crops, non-grazed areas (including forestry, riparian and tree areas) and any crop rotation;

(ii) Stock management – lambing/calving/fawning dates and percentages, any purchases and sales and associated dates, types and age of stock;

(iii) Fertiliser application – types and quantities per hectare for each identified block, taking into account any crop rotation;

(iv) Quantities of introduced or exported feed;

(e) Farm animal effluent, pig farm effluent, feed pad and stand-off pad effluent management including:

(i) Area of land used for effluent application;

(ii) Annual nitrogen loading rate and nitrogen load rate per application;

(iii) Instantaneous application rate; (f) Irrigation – areas, rates, monthly volumes and system type. The information is to be collated for the period 1 July to 30 June in the following year."

11.233 Another additional requirement for farm environment plans prepared under Schedule 7 is requested by Lake Ellesmere Dairy Farmers Group - the Group seeks to include drain management in Cultural Landscape/Values Management Areas.

11.234 Horticulture NZ seeks to amend Schedule 7 by deleting bullet points 2 and 3. Ravensdown requests clarification of the meaning of "curtail the loss of phosphorus."

11.235 Ellesmere Irrigation Society requests the deletion of all the proposed changes to Schedule 7.

11.236 Farm environment plans are a key concept in both the pLWRP region-wide provisions and in this sub-regional section. In this sub-regional section there is also reliance on a range of actions (detailed below) in Schedule 24. There will inevitably be some overlap between farm environment plans and the actions in Schedule 24. While requirements for farm environment plans and Schedule 24 could be increased or decreased, or the location of the requirements shifted between the two schedules, these requirements have been developed through a consultation process and with input from the Zone Committee and industry. Overall, and subject to the recommendation in relation to the analysis of provisions relating to drains further below, the various requests from the submitters for additions, deletions or moving components between the schedules are not considered to substantially improve environmental outcomes in a cost effective way.

Schedule 24

11.237 Schedule 24 states:

Schedule 24 – Farm Practices

(a) Nutrient Management:

(i) A nutrient budget based on soil nutrient tests has been prepared, using OVERSEER in accordance with the OVERSEER Best Practice Data Input Standards [2013], or an equivalent model approved by the Chief Executive of Environment Canterbury and is reviewed annually.

(ii) Fertiliser is applied in accordance with the Code of Practice for Nutrient Management [2007]; and either

(a) the Spreadmark Code of Practice; or

(b) With spreading equipment that is maintained and self-calibrated to Spreadmark Code of Practice standards.

(iii) Records of soil nutrient tests, nutrient budgets and fertiliser applications are kept and provided to the Canterbury Regional Council upon request

(b) Irrigation management:

(i) All irrigation systems installed or replaced after 1 January 2014 meet the Irrigation New Zealand Piped Irrigation Systems Design Code of Practice [2013], Irrigation New Zealand Piped Irrigation Systems Design Standards [2013] and the Irrigation New Zealand Piped Irrigation Systems Installation Code of Practice [2013].

(ii) The irrigation system application depth and uniformity are self-checked annually in accordance with the relevant Irrigation NZ Pre-Season Checklist and IRRIG8Quick Irrigation Performance Quick Tests for any irrigation system operating on the property.

(iii) Irrigation applications are undertaken in accordance with property specific soil moisture monitoring, or a soil water budget, or an irrigation scheduling calculator.

(iv) Records of irrigation system application depth and uniformity checklists, irrigation applications, soil moisture monitoring or soil water budget or irrigation scheduling calculator results and rainfall are kept and provided to the Canterbury Regional Council upon request.

(c) Intensive winter grazing:

(i) For all intensive winter grazing adjacent to any river, lake, artificial watercourse (excluding irrigation canals or stock water races) or a wetland, a 5m vegetative strip (measured from the edge of the bed of the river, lake, artificial watercourse, or wetland) from which stock are excluded, is maintained around the water body.

(d) Cultivation:

(i) For all cultivation adjacent to any river, lake, artificial watercourse (excluding irrigation canals or stock water races) or a wetland, a 2m uncultivated vegetative strip (measured from the edge of the bed of the river, lake, artificial watercourse, or wetland) is maintained around the water body.

(e) Collected Animal Effluent:

(i) All collection, storage and treatment systems for animal effluent installed or replaced after 1 January 2014 meet the Dairy NZ Farm Dairy Effluent Design Standard and Code of Practice [2013].

(ii) The animal effluent disposal system application separation distances, depth, uniformity and intensity are self-checked annually in accordance with Section 4 'Land Application' in the Dairy NZ Farm Dairy Effluent Design Standard [2013]. Records of self-checked animal effluent disposal system application separation distances, depth, uniformity and intensity in accordance with Section 4 'Land Application' in the Dairy NZ Farm Dairy Effluent Design Standard [2013] are kept and provided to the Canterbury Regional Council upon request.

11.238 Lake Ellesmere Dairy Farmers Group and Horticulture NZ seek to retain Schedule 24. Horticulture NZ seeks clarification that Schedule 24 applies specifically to the Selwyn Te Waihora sub region.

11.239 Forest and Bird seeks to retain Schedule 24(c)(i) and amend Schedule 24(d)(i) so there will be a minimum of a 5m uncultivated vegetative strip, consistent with (c)(i).

11.240 The Fertiliser Association of NZ seeks a number of amendments including:

- "*soil nutrient test"* to "*soil test"*.
- amend "*and is reviewed annually*" to read "*and is reviewed triennially and after any significant farm system change*."
- amend "*self-calibrated spreading equipment*" to "*user-calibrated spreading equipment*."

11.241 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks the following additions to Schedule 24:

"(a) Nutrient Management….

(iv) Practices to be implemented within defined timeframes to ensure that the nutrient loss is at or below that calculated using the Matrix of Good Management or an alternative method; and

(v) Practices to be implemented within defined timeframes to ensure that the nutrient loss is tracking towards the trigger level".

(c) Intensive Winter Grazing:

(ii) The use of a 'paddock selection tool' or something similar when determining any paddocks to be used for winter fodder crops; and

(iii) Practices to implemented to minimize the loss of sediment from the property, including but not limited to how the paddock is grazed and the use of 'run-off' blocks for wintering".

11.242 Federated Farmers seeks to amend Schedule 24 clauses (c) and (d) to read:

"(c) For all intensive winter grazing adjacent to any river, lake, artificial watercourse (excluding irrigation canals or stock water races) or a wetland, maintain a vegetative strip to prevent gross discharge of contaminants unless in exceptional circumstances such as very intense rainfall. As a guideline, intensive winter grazing and cultivation will be set back 5m or 2m from the bed. Greater or lesser setbacks may be appropriate, depending on density and type of stock, farm management practice, soil properties, and the presence of sloping ground, swales, or contaminant flow paths.

(d) For all cultivation adjacent to any river, lake, artificial watercourse (excluding irrigation canals or stock water races) or a wetland, maintain a vegetative strip to prevent gross discharge of contaminants unless in exceptional circumstances such as very intense rainfall. As a guideline, intensive winter grazing and cultivation will be set back 5m or 2m from the bed. Greater or lesser setbacks may be appropriate, depending on density and type of stock, farm management practice, soil properties, and the presence of sloping ground, swales, or contaminant flow paths. "

11.243 Fonterra and Dairy NZ seek to delete (e) from proposed Schedule 24. Fonterra and Dairy NZ request a new method or advisory note stating that Schedule 24 will not apply once good management practice nitrogen and phosphorus rates are introduced to the plan.

11.244 Ravensdown and Ballance Agri-Nutrients seek clarification on the meaning of "reviewed annually" and to what it applies. Ballance seeks a definition that is constrained to an assessment of input data necessary to run OVERSEER.

11.245 Other submitters, such as the Fertiliser Association of NZ, question the need to review nutrient budgets annually. Southbank Dairies, F & R Lamborn and McKavanagh Holdings Ltd request the inclusion of a version number or review dates for the Spreadmark code of practice.

11.246 Ellesmere Irrigation Society requests the deletion of paragraphs (c) and (d) of Schedule 24 on intensive winter grazing and cultivation.

11.247 C Ryan seeks amendment regarding riparian fencing. The submitter identifies that the 2 m might be effective for sedimentation but is inadequate for nitrogen and phosphorus loss and seeks an amendment to 10 m.

Definition of Cultivation

11.248 The following definition of "cultivation" is contained in the Selwyn Te Waihora part of Variation 1 and reads:

Cultivation means the preparation of land for growing pasture or a crop and the planting, tending and harvesting of that pasture or crop, but excludes:

- *direct drilling of seed;*
- *no-tillage practices;*
- *re-contouring of land; and*
- *forestry.*

11.249 One submission was received on the definition. The Ellesmere Irrigation Society submitted in opposition requesting the deletion of the definition as there are no policies or rules relating to cultivation. The Ellesmere Irrigation Society states that the definition of Cultivation was argued during the hearings on the pLWRP, and consequently should not be "re-inserted" into the pLWRP via this Variation.

11.250 There are no policies or rules directly referring to "cultivation". However, the term is used in Schedule 24 (Farm Practices), which sets out management practices relating to a range of matters, including cultivation.

11.251 The second aspect, concerning the definition being argued and removed from the pLWRP may warrant expansion from the submitter at the hearing. The definition was not included in the "as notified" pLWRP and is not included in the decisions version of the pLWRP. It was, however, contemplated in the earlier Section 42A Report.

11.252 Overall, a definition is required to clarify the meaning of cultivation as it is used in Schedule 24 and, in particular, the exclusions from the definition. Given that the definition is used in Schedule 24 only, it is recommended that it be deleted from the Selwyn Te Waihora section and included as a foot-note in Schedule 24.

Definition of Intensive Winter Grazing

11.253 The definition of Intensive Winter Grazing reads:

Intensive Winter Grazing means grazing of stock between 1 May and 30 September on fodder crops or pasture where the grazing results in removal of, or damage to vegetation and exposes bare ground and/or pugging of the soil.

11.254 Beef + Lamb NZ seeks to amend the definition of Intensive Winter Grazing to read: *"means grazing of stock between 1 May and 30 September on fodder crops or pasture where the grazing results in removal of, or damage to vegetation and exposes <u>large areas of</u> bare ground and/or pugging of the soil."*

11.255 The Fertiliser Association of NZ seeks to amend the definition to read: "*means grazing of stock between ~~1~~ May and ~~30~~ September inclusive on fodder crops or pasture ~~where the grazing results in removal of, or damage to vegetation and exposes bare ground and/or pugging of the soil~~ to the extent that the grazing results in significant de-vegetation. This is usually associated with break feeding behind temporary electric fencing.*"

11.256 Federated Farmers seeks to amend the definition to read: "*means grazing of stock between 1 May and 30 September on fodder crops or pasture ~~where~~ to the extent that the grazing results in ~~removal of, or damage to vegetation and exposes bare ground and/or pugging of the soil.~~ significant pugging or de-vegetation. This is usually associated with break feeding behind temporary fencing.*"

11.257 NZ Pork seeks to amend the definition to: "*means grazing of stock between 1 May and 30 September on fodder crops or pasture ~~where the grazing results in damage to vegetation and exposes bare ground and/or pugging of the soil~~ at a stocking rate that precludes the maintenance of groundcover, as defined by industry derived Good Management Practice.*"

Analysis regarding Schedule 24 practices

11.258 There is considerable reliance within the rules in Variation 1 on farm environment plans, and the practices to achieve good management that are set out in Schedule 24. These are, without doubt, appropriate activities and mechanisms by which farmers can begin to manage their nutrient discharges, especially of phosphorous.

11.259 Indeed, a significant amount of the non-regulatory actions and nitrogen mitigation will be achieved through activities adjacent to water bodies, along with the general implementation of good management practice over time.

11.260 Variation 1, through the Zone Committee and consultation process, settled on a position of setting out a range of good practice activities in Schedule 24, and reliance on farm environment plans. This is under a permitted activity framework for farms with nitrogen losses of less than 15kg/ha/pa, and a consent framework for farms over that threshold. The analysis and reasons for the framework are set out in the section 32 report.

11.261 Submitters have sought alternative frameworks, for the rules and Schedule 24 activities, as well as alternative actions under Schedule 24 and content of farm environment plans.

11.262 Overall, there appear to be four options for rule provisions in Variation 1 (in no particular order):

1. Retain the current requirement to undertake Schedule 24 actions and farm environment plans, under a permitted activity framework or resource consent, with a 15kg/ha/pa threshold.
2. Retain the current requirement to undertake Schedule 24 actions and farm environment plans, under a permitted activity framework or resource consent, with a

15kg/ha/pa threshold, but with strengthening of the provisions to incorporate more certainty that there will be tangible improvements, through requiring implementation of the plans, auditing and greater information provision. The recent framework established for the Tukituki catchment in the Hawkes Bay could be used as a start-point for revised provisions.

3. Retain the current requirement for farm environment plans, under a resource consent framework for those farms above the 15kg/ha/pa threshold, remove the permitted activity farm environment plans for those farms less than the 15kg/ha/pa threshold, and replace with a simpler requirement to undertake a greater range of practical on-farm activities and information provision under a "strengthened" Schedule 24.
4. Retain the current requirement for farm environment plans, but place them all under a resource consent framework, so that there is control over the content, implementation and auditing of the plans.

11.263 However, ahead of the hearing process and the evidence to be given by various submitters, both for and against the role of farm environment plans, no recommendation is made on the most appropriate rule framework for farm environment plans.

11.264 Subject to the fundamental decisions being made on the rule framework, some initial recommendations are made below regarding the submissions specifically on the content of Schedule 24.

Recommendation RSchedule24

Schedule 24 – Farm Practices

(a) Nutrient Management:

(i) A nutrient budget based on soil ~~nutrient~~[140] tests has been prepared, using OVERSEER in accordance with the OVERSEER Best Practice Data Input Standards [2013], or an equivalent model approved by the Chief Executive of Environment Canterbury and is reviewed annually.

(ii) Fertiliser is applied in accordance with the Code of Practice for Nutrient Management [2007]; and either

(a) the Spreadmark Code of Practice; or

(b) With spreading equipment that is maintained and user-calibrated ~~self-calibrated~~[141] to Spreadmark Code of Practice standards.

(iii) Records of soil ~~nutrient~~ tests, nutrient budgets and fertiliser applications are kept and provided to the Canterbury Regional Council upon request

(b) Irrigation management:

Soil moisture monitoring means methods of monitoring soil moisture that use either volumetric or tension based methodology.[142]

(i) All irrigation systems installed or replaced after 1 January 2014 meet the Irrigation New Zealand Piped Irrigation Systems Design Code of Practice [2013], Irrigation New Zealand

[140] V1pLWRP-792- Fertiliser Association of NZ

[141] V1pLWRP-797 - Fertiliser Association of NZ

[142] Recommended to be shifted into this Schedule, along with other definitions that only relate to this Schedule.

Piped Irrigation Systems Design Standards [2013] and the Irrigation New Zealand Piped Irrigation Systems Installation Code of Practice [2013].

(ii) The irrigation system application depth and uniformity are self-checked annually in accordance with the relevant Irrigation NZ Pre-Season Checklist and IRRIG8Quick Irrigation Performance Quick Tests for any irrigation system operating on the property.

(iii) Irrigation applications are undertaken in accordance with property specific soil moisture monitoring, or a soil water budget, or an irrigation scheduling calculator.

(iv) Records of irrigation system application depth and uniformity checklists, irrigation applications, soil moisture monitoring or soil water budget or irrigation scheduling calculator results and rainfall are kept and provided to the Canterbury Regional Council upon request.

(c) Intensive winter grazing:

Intensive winter grazing means grazing of stock between 1 May and 30 September on fodder crops or pasture where the grazing results in significant pugging or de-vegetation. This is usually associated with break feeding behind temporary fencing. ~~removal of, or damage to vegetation and exposes bare ground and/or pugging of the soil.~~[143]

(i) For all intensive winter grazing adjacent to any river, lake, artificial watercourse (excluding irrigation canals or stock water races) or a wetland, a 5m vegetative strip (measured from the edge of the bed of the river, lake, artificial watercourse, or wetland) from which stock are excluded, is maintained around the water body.

(d) Cultivation:

Cultivation means the preparation of land for growing pasture or a crop and the planting, tending and harvesting of that pasture or crop, but excludes:

- *direct drilling of seed;*
- *no-tillage practices;*
- *re-contouring of land; and*
- *forestry.*[144]

(i) For all cultivation adjacent to any river, lake, artificial watercourse (excluding irrigation canals or stock water races) or a wetland, a 2m uncultivated vegetative strip (measured from the edge of the bed of the river, lake, artificial watercourse, or wetland) is maintained around the water body.

(e) Collected Animal Effluent:

(i) All collection, storage and treatment systems for animal effluent installed or replaced after 1 January 2014 meet the Dairy NZ Farm Dairy Effluent Design Standard and Code of Practice [2013].

(ii) The animal effluent disposal system application separation distances, depth, uniformity and intensity are self-checked annually in accordance with Section 4 'Land Application' in the Dairy NZ Farm Dairy Effluent Design Standard [2013]. Records of self-checked animal effluent disposal system application separation distances, depth, uniformity and intensity in accordance with Section 4 'Land Application' in the Dairy NZ Farm Dairy Effluent Design Standard [2013] are kept and provided to the Canterbury Regional Council upon request.

[143] V1pLWRP-876 - Federated Farmers

[144] There are no changes to this definition, it is shifted into this schedule as it only relates to this schedule.

Community Sewerage Systems and Industrial Trade Processes

11.265 The provisions for community sewerage systems and industrial and trade waste discharges comprise four related policies, three rules and a table of limits. As the policies, rules and tables are inherently related and require consistent decision-making, they are considered together here.

11.266 Policies 11.4.7, 11.4.8, 11.4.10 and 11.4.11 state (Policy 11.4.9 is assessed in the provisions related to the Cultural Landscape/Values Management Area):

11.4.7 Require any person discharging sewage sludge, bio-solids or treated sewage effluent into or onto land from a community wastewater system to adopt the best practicable option to manage the treatment and discharge of contaminants and meet the nitrogen load limit for community sewerage systems in Table 11(i) unless Policy 11.4.8 applies.

11.4.8 Allow the discharge of sewage sludge, bio-solids and treated sewage effluent into or onto land from a community wastewater system that will cumulatively result in the exceedance of the nitrogen load limit for community sewerage systems in Table 11(i) only if the exceedance is less than the nitrogen load contribution from the aggregation of on-site domestic wastewater treatment systems that would be replaced by the community wastewater system.

11.4.10 Require any person discharging wastewater, liquid waste or sludge waste from an industrial or trade process into or onto land to adopt the best practicable option to manage the treatment and discharge of contaminants and meet the nitrogen load limit for industrial and trade processes in Table 11(i) unless Policy 11.4.11 applies.

11.4.11 Enable the discharge of wastewater, liquid waste or sludge waste from an industrial or trade process into or onto land which cumulatively will result in the exceedance of the nitrogen load limit for industrial and trade processes in Table 11(i) only in circumstances where the activity is replacing a farming activity and the discharge will not exceed 15 kg nitrogen per hectare per annum.

11.267 Rule 11.5.22, 11.5.23, 11.5.25 and 11.5.26 are additions to Section 11 and state (Rule 11.5.24 is assessed in the provisions related to the Cultural Landscape/Values Management Area):

11.5.22 Within the Selwyn Waihora catchment the use of land for a community wastewater treatment system and the discharge of sewerage sludge, bio-solids and treated sewerage effluent from a community wastewater treatment system and the discharge of sewerage sludge and bio-solids from a domestic on-site waste water treatment system into or onto land, or into or onto land in circumstances where a contaminant may enter water is a discretionary activity where the following condition are met:

1. *The discharge in addition to all lawfully established existing discharges does not exceed the nitrogen load limit in Table 11(i) for community sewerage systems; and*
2. *The best practicable option is used for the treatment and discharge.*

11.5.23 Within the Selwyn Waihora catchment the use of land for a community wastewater treatment system and the discharge of sewerage sludge, bio-solids and treated sewerage effluent from a community wastewater treatment system and the discharge of sewerage sludge and bio-solids from a domestic on-site waste water treatment system into or onto land, or into or onto land in circumstances where a contaminant may enter water in the Selwyn Waihora catchment that does not comply with Rule 11.5.22 is a non-complying activity.

11.5.25 Within the Selwyn Waihora catchment the discharge of any wastewater, liquid waste or sludge waste from an industrial or trade process, including livestock processing, excluding sewerage, into or onto land, or into or onto land in circumstances where a contaminant may enter water is a discretionary activity where the following conditions are met:

1. *The discharge in addition to all lawfully established existing discharges does not exceed the nitrogen load limit in Table 11(i) for industrial or trade processes; or*
2. *The activity is replacing an existing farming activity and the discharge does not exceed 15 kg nitrogen per hectare per annum; and*
3. *The best practicable option is used for the treatment and discharge.*

11.5.26 Within the Selwyn Waihora catchment the discharge of any wastewater, liquid waste or sludge waste from an industrial or trade process, including livestock processing, excluding sewerage, into or onto land, or into or onto land in circumstances where a contaminant may enter water that does not meet one or more of the conditions in Rule 11.5.25 is a non-complying activity.

11.268 Table 11(i) – relates to limits and targets for nitrogen discharges. Part of this Table is relevant to community sewerage systems and industrial and trade waste discharges, and states:

Catchment	***Activity***	***Nitrogen Load (tonnes/year)***	***Limit/Target***
Selwyn Waihora	*Community sewerage systems*	*62*	*Limit*
	Industrial or trade processes	*106*	*Limit*

11.269 Only a small number of submissions were received on the policies relating to community sewerage systems and industrial and trade process.

11.270 ANZCO and CMP seek to ensure consistency in language and terminology with the pLWRP. The submitter states that the Variation refers to 'Industrial and Trade Processes' and the pLWRP refers to 'Industrial and Trades Wastes'.

11.271 Policies 11.4.8 and 11.4.9 are supported by Selwyn DC and Christchurch City Council.

11.272 Selwyn DC also seeks to add a new policy to read: "*Discharges from regionally significant infrastructure activities should be managed so that the quality of the discharge occurs in accordance with the best practicable option.*"

11.273 ANZCO & CMP request policies 11.4.7, 11.4.8, and 11.4.10 be deleted. ANZCO & CMP are concerned with the significant uncertainty surrounding the discharges from industrial or trade processes.

11.274 Synlait and Fonterra submit in opposition to the inclusion of industrial or trade processes in the nitrogen load limits. Synlait and Fonterra discuss the difficulty in measuring and calculating nitrogen loads of discharges in the Selwyn Te Waihora sub-regional area and give examples of consented discharges that are not recognised in the Loe Pearce and Associates Report[145] which formed the basis of the nitrogen limits in Table 11(i). Both submitters also seek amendments to the limits contained in Table 11(i).

11.275 Synlait seeks to amend Policy 11.4.11 to provide greater flexibility by enabling either the greater of 15kg/ha/pa nitrogen or the nitrogen baseline for the property to be used for assessing discharges. Fonterra seeks similar amendments as follows:
"…the nitrogen discharge per hectare per year will not exceed ~~15 kg nitrogen per hectare per annum~~ the greater of:
1. 15 kg nitrogen per hectare per annum; or
2. the lawfully permissible nitrogen loss from the farming activity that is replaced."

11.276 ANZCO & CMP request amendment to Policy 11.4.11 as follows (or similar): "*Enable...replacing a farming activity and the ~~discharge~~ net Nitrogen loading rate will not exceed ~~15~~ 150 kg nitrogen per hectare per annum*".

11.277 Synlait Farms and Synlait Milk seek clarification of the term "replacing a farming activity".

11.278 A small number of submissions were received on the rules relating to community sewerage systems and industrial trade processes.

11.279 Te Taumutu Rūnanga requests amendments to Rules 11.5.22 and 11.5.23 to alter the activity status to non-complying. The submitter is concerned the Rule will not give effect to Policy 11.4.9 and is unlikely to eliminate sewage discharges to Te Waihora/Lake Ellesmere.

11.280 Selwyn DC seeks clarification of the wording of condition 1 of Rule 11.5.22 by amending as follows: "*The discharge in addition to all lawfully established existing community sewerage system discharges does not exceed the nitrogen load limit in Table 11(i) for community sewerage systems; and...*"

11.281 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks clarification by amending Rule 11.5.26 to state *"the discharge of any treated wastewater*".

11.282 ANZCO & CMP seek an amendment to Rule 11.5.25: "*Within...where a contaminant may enter water (but excluding the renewal of any existing lawfully established discharge) that*

[145] Estimating nitrogen and phosphorus contributions to water from discharges of sewerage effluent from community sewerage systems, and milk processing wastewater (Loe Pearce and Associates Report No. R13/8).

does not meet...is a non-complying activity." The submitter states that this will clarify the position for existing consent holders.

11.283 A large number of submissions were received on Table 11(i). The Table is also addressed in the Nitrogen Management Framework Section of this part of this Section 42A Report. In regards to the submissions on community sewerage systems and industrial trade processes limits, the following decisions are requested.

11.284 Selwyn DC seeks that Table11(i) be retained, particularly the targets relating to community sewerage systems.

11.285 A number of submitters seek an assurance that the targets and limits are correct. Synlait Farms, Synlait Milk, Fonterra and Dairy NZ seek to amend the nitrogen load limit for industrial and trade processes in Table 11(i) by adjusting the allocation above 106 tonnes to capture all consented discharges and allow for future growth in the sub-regional area. Fonterra suggests that if its consented discharges that were omitted from this calculation are included, then the adjusted limit should be 132.4 tonnes.

11.286 Lake Ellesmere Dairy Farmers Group questions the nitrogen loading limit of 95% coming from farming activities and only 5% from urban, industrial and trade discharges to land.

11.287 Synlait Farms and Synlait Milk seek clarification of whether domestic sludge should or should not be included in the limits and that the allocation of nitrogen to community and sewerage systems is accurate and reflects the waste disposed to land.

11.288 Fonterra seeks to amend the Variation to include a new rule to read:

> *"Within the Selwyn-Waihora catchment the discharge of any industrial or trade process sludge waste, including sludge waste from livestock processing, excluding sewage, into or onto land, or into or onto land in circumstances where a contaminant may enter water is a controlled activity where the following conditions are met:*
>
> *1. The discharge of the industrial or trade process sludge is undertaken in association with a farming activity being used as a substitute, or part substitute, for fertiliser.*
>
> *2. The farming activity is a permitted activity under any of Rules 11.5.6-11.5.8 or has been granted a resource consent in accordance with any of Rules11.5.9-11.5.11 or 11.5.14.*
>
> *3. The discharge of industrial or trade process sludge waste occurs no more than twice per annum on the same area of land. Matters of control*
>
> *1. The location, rate and timing of the application sludge waste to land.*
>
> *2. Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape /Values Management Area."*

11.289 ANZCO and CMP seek to include a new Rule before Rule 11.5.6 which provides as follows (or similar):

"11.5.X Rules 11.5.6 to 11.5.15 do not apply to the use of land for the land based disposal of wastewater from industrial processing plants, including livestock processing plants."

11.290 ANZCO & CMP seek that industrial trade processes and the limits for industrial trade processes be deleted from the table.

11.291 The industrial and community nitrogen limit has been calculated through considering each of the existing resource consents for industrial or community discharges, their nitrogen load and the potential for leaching of that nitrogen.

11.292 The community sewerage system limit includes an allowance for growth of the various communities. This has attracted submissions in opposition and in support, and is a difficult issue. On the one hand it is reasonable to enable the growth of communities, indeed if the nutrient discharges from effluent systems were not able to occur, then population growth could be substantially affected, which may well be against the express outcomes of the Land Use Recovery Plan. On the other hand, there is a general policy position to reduce the amount of nutrients being discharged in the catchment, and the setting of a limit that enables some growth is potentially contrary to this overall policy position.

11.293 The provisions have already been subject to reasonably complex analysis of the various permutations of industrial and community discharges which may occur in association with underlying farming land uses. The most difficult circumstances are with respect to primary production processing discharges, such as meat processing and milk processing, where the discharges are generally irrigated onto pasture and crops, along with other water.

11.294 Overall, the industrial and community sewerage system limit calculation does have a degree of uncertainty, possibly the most significant being that the leaching takes no account of the underlying land use. In other words, if the industrial or community discharge is being applied to land where there are already relatively intense agricultural activities, the additional nitrogen may have a higher leaching potential than an industrial or community discharge to a low leaching land use, such as forestry.

11.295 Consent holders have generally engaged strongly in the Variation 1 process in order to address their concerns with respect to these provisions.

11.296 Several submitters have identified that the nitrogen load for their particular consents has either been omitted or is incorrect. There is some uncertainty with respect to the calculation of the nitrogen discharge for the various discharge permits. If a limit is a desirable position, the limit for industrial discharges should be increased to 132.4 tonnes, as requested by Fonterra.

11.297 Fundamentally, there is a difficulty in setting a blanket discretionary activity status for industrial and community discharges with reference to the limit contained in Table 11(i). Essentially, there is no accounting system or other mechanism in place by which it can be clearly identified when the limits or targets in Table 11(i) are reached.

11.298 The Rule provision that enables the discharge of industrial and community waste up to the 15 kg/ha/pa nitrogen threshold will not be of assistance to the majority of dischargers within the catchment, as most are located in areas where more intensive production is occurring and the 15 kg threshold is already passed.

11.299 Overall, there are options to:

- Increase the industrial and community nitrogen load in line with submitter requests;
- Treat the industrial and community load as no different to any other nitrogen load, i.e. create a single nitrogen load for the catchment and deal with the issues through consenting.

11.300 Each of these options has positive and negative elements. However, the management of nitrogen under a single limit or target, from whichever source, has some inherent simplicity.

11.301 In considering the submissions, along with the difficulty of new discharges operating within the 15kg threshold, and with the reality that nitrogen is nitrogen no matter what its source, the need for a specific limit for community sewerage system and industrial discharges is reduced, and the target can be adjusted to be a single target for the catchment.

11.302 A re-orientation of the policies and rules such that existing discharges are considered to be part of the environment that exists, a requirement to use the best practicable option for minimising discharges and for new discharges to create no net increase in nitrogen discharge appears to be a simpler framework moving forward. While OVERSEER can be used to estimate losses from industrial and community wastes, it has a degree of uncertainty. This is likely to improve over time with further development of the model.

11.303 On this basis, and noting the discretionary activity status for most industrial and community discharges under the region-wide rules, a considerable simplification of the policies and rules in the sub-regional section is recommended. This will result in reliance on the existing consents and use of the best practicable option, a policy position of enabling no more nitrogen loss than the previous land use and consequent reliance on the region-wide rules.

Recommendation:

It is recommended that the policies, rules and table be amended as follows:

11.4.7 Require any person discharging sewage sludge, bio-solids or treated sewage effluent into or onto land from a community wastewater system to:

(a) adopt the best practicable option to manage the treatment and discharge of contaminants; and

(b) comply with the terms of any discharge permit that existed as at 13 February 2014, for the term of that discharge permit; and

(c) enable new discharges only where the nitrogen loss from the discharge is less than the lawfully permissible nitrogen loss from the farming activity that is replaced or less than

the nitrogen load contribution from the aggregation of on-site domestic wastewater treatment systems that would be replaced by the community wastewater system.

~~*meet the nitrogen load limit for community sewerage systems in Table 11(i) unless Policy 11.4.8 applies.*~~

~~*11.4.8 Allow the discharge of sewage sludge, bio-solids and treated sewage effluent into or onto land from a community wastewater system that will cumulatively result in the exceedance of the nitrogen load limit for community sewerage systems in Table 11(i) only if the exceedance is less than the nitrogen load contribution from the aggregation of on-site domestic wastewater treatment systems that would be replaced by the community wastewater system.*~~

11.4.10 Require any person discharging wastewater, liquid waste or sludge waste from an industrial or trade process into or onto land to:

(a) adopt the best practicable option to manage the treatment and discharge of contaminants; and

(b) comply with the terms of any discharge permit that existed as at 13 February 2014, for the term of that discharge permit; and

(c) enable new discharges only where the nitrogen loss from the discharge is less than the lawfully permissible nitrogen loss from the farming activity that is replaced.

~~*meet the nitrogen load limit for industrial and trade processes in Table 11(i) unless Policy 11.4.11 applies.*~~

~~*11.4.11 Enable the discharge of wastewater, liquid waste or sludge waste from an industrial or trade process into or onto land which cumulatively will result in the exceedance of the nitrogen load limit for industrial and trade processes in Table 11(i) only in circumstances where the activity is replacing a farming activity and the discharge will not exceed 15 kg nitrogen per hectare per annum.*~~

~~*11.5.22 Within the Selwyn Waihora catchment the use of land for a community wastewater treatment system and the discharge of sewerage sludge, bio-solids and treated sewerage effluent from a community wastewater treatment system and the discharge of sewerage sludge and bio-solids from a domestic on-site waste water treatment system into or onto land, or into or onto land in circumstances where a contaminant may enter water is a discretionary activity where the following condition are met:*~~

~~*1. The discharge in addition to all lawfully established existing discharges does not exceed the nitrogen load limit in Table 11(i) for community sewerage systems; and*~~

~~*2. The best practicable option is used for the treatment and discharge.*~~

~~*11.5.23 Within the Selwyn Waihora catchment the use of land for a community wastewater treatment system and the discharge of sewerage sludge, bio-solids and treated sewerage effluent from a community wastewater treatment system and the discharge of sewerage sludge and bio-solids from a domestic on-site waste water treatment system into or onto land, or into or onto land in circumstances where a contaminant may enter water in the Selwyn Waihora catchment that does not comply with Rule 11.5.22 is a non-complying activity.*~~

11.5.25 Despite Rules 11.5.6 to 11.5.15, w~~W~~ithin[146] the Selwyn Te Waihora catchment the discharge of any wastewater, liquid waste or sludge waste from an industrial or trade process, including livestock processing, excluding sewerage, into or onto land, or into or onto land in circumstances where a contaminant may enter water is a discretionary activity where the following conditions are met:

1. *The discharge was lawfully established prior to 13 February 2014[147] ~~in addition to all lawfully established existing discharges does not exceed the nitrogen load limit in Table 11(i) for industrial or trade processes~~; or*
2. *Where the nitrogen loss from the discharge is less than the lawfully permissible nitrogen loss from the farming activity that is replaced[148] ~~The activity is replacing an existing farming activity and the discharge does not exceed 15 kg nitrogen per hectare per annum~~; and*
3. *For all discharges, the best practicable option is used for the treatment and discharge.*

11.5.26 Within the Selwyn Waihora catchment the discharge of any wastewater, liquid waste or sludge waste from an industrial or trade process, including livestock processing, excluding sewerage, into or onto land, or into or onto land in circumstances where a contaminant may enter water that does not meet one or more of the conditions in Rule 11.5.25 is a non-complying activity.

~~Catchment~~	~~Activity~~	~~Nitrogen Load (tonnes/year)~~	~~Limit/Target~~
~~Selwyn Waihora~~	~~Community sewerage systems~~	~~62~~	~~Limit~~
	~~Industrial or trade processes~~	~~106~~	~~Limit~~

Miscellaneous

Rules 11.5.10 – 11.5.12

11.304 Rules 11.5.10 – 11.5.12 read:

11.5.10 The use of land for a farming activity as part of a farming enterprise in the Selwyn Waihora catchment is a discretionary activity, provided the following conditions are met:

1. *A Farm Environment Plan has been prepared in accordance with Schedule 7 Part A; and*
2. *The nitrogen loss calculation for the farming enterprise has not increased above the nitrogen baseline.*

11.5.11 The use of land for a farming activity or farming enterprise that does not comply with conditions 3 or 4 of Rule 11.5.7, conditions 2, 3 or 4 of Rule 11.5.8, condition 2 of Rule 11.5.9 or condition 1 of Rule 11.5.10 is a non-complying activity.

[146] V1pLWRP-1507- ANZCO & CMP
[147] V1pLWRP-1484- ANZCO & CMP
[148] V1pLWRP-1226-Fonterra

11.5.12 The use of land for a farming activity or farming enterprise that does not comply with condition 2 of Rule 11.5.7, condition 3 of Rule 11.5.9 or condition 2 of Rule 11.5.10 is a prohibited activity

11.305 Six submissions were received in support of Rule 11.5.10, such as Forest and Bird, The Crossing Ltd and NZ King Salmon.

11.306 Ellesmere Irrigation Society seeks that Rule 11.5.10 be deleted because it will become redundant based on the submitters proposed amendments.

11.307 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks to amend Rule 11.5.10 as follows:

"Until 1 January 2017 t ~~T~~ he use of land for a farming activity as part of a farming enterprise in the Selwyn-Waihora catchment is a ~~discretionary~~ permitted activity, provided the following conditions are met:

1. *A Farm Environment Plan has been prepared in accordance with Schedule 7 ~~Part A~~ and is provided to Environment Canterbury upon request ; and*
2. *The nitrogen loss calculation for the farming enterprise has not increased above the nitrogen baseline; and*
3. *The farming enterprise is not irrigated with water from an irrigation scheme; and*
4. *The farming enterprise is not located with the Cultural Landscape/Values Management Area.*

11.308 Synlait Farms, Fonterra, and Dairy NZ seek the activity be amended from discretionary status to restricted discretionary. Fonterra and Dairy NZ request the following as the matters of discretion:

"The exercise of discretion is restricted to the following matters.

1. *The quality of compliance with the Farm Environment Plan; and*
2. *Existing nitrogen and phosphorus management practices on the property and the potential to adopt or improve management practices to reduce nutrient loss; and*
3. *The nitrogen load target for farming activities in Table 11(i); and*
4. *The potential benefits of the activity to the applicant, the community and the environment".*

11.309 Central Plains Water seeks to include a new rule under Rule 11.5.10 to read:

"11.5.10A Notwithstanding rules 11.5.6 to 11.5.9, the use of land for a farming activity as part of a nutrient management group in the Selwyn-Waihora catchment is a discretionary activity, provided the following conditions are met:

1. *the nutrient management group has a nutrient management plan that manages the allocation of nutrients between members;*
2. *the properties subject to the nutrient management group are all subject to a Farm Environment Plan that has either been prepared in accordance with Schedule 7 Part A or is consistent with Schedule 7 Part A; and*
3. *the nitrogen loss calculation for all members of the nutrient management group does not increase above the total combined*

nitrogen baseline for all members. Note: If a member of the nutrient management group receives water from the Central Plains scheme, then compliance for Central Plains with the total scheme nitrogen limit in Table 11(j) shall be based on the individual nitrogen baseline of the relevant member and not its share of the total combined nitrogen baseline available by virtue of any nutrient management group."

11.310 Rule 11.5.10 closely follows the format of the region-wide provisions for farming enterprises. The concept is intended to enable some development between farms by the balancing of nitrogen losses to achieve a neutral position between the properties. While some submitters have sought changes to the activity status or variations to the Rule, the present rule is recommended to continue, in part for consistency with the region-wide provisions and the enabling of management of a large number of properties under the irrigation scheme provisions.

11.311 Six submissions were received in support of Rule 11.5.11 such as Forest and Bird, The Crossing Ltd and NZ King Salmon.

11.312 Fonterra and Dairy NZ seek to combine rules 11.5.11 and 11.5.12 such that any farming activity that does not meet one or more of the conditions of restricted discretionary activity becomes a non-complying activity and not prohibited. This decision requested is also made by Horticulture NZ.

11.313 M. Bruce seeks to delete Rule 11.5.11.

11.314 Six submissions were received in support of Rule 11.5.12 such as Forest and Bird, The Crossing Ltd and NZ King Salmon.

11.315 Ravensdown request amending the activity to non-complying.

11.316 Synlait Farms seeks to amend Rule 11.5.12 so that the "prohibited activity" status only applies to farms that clearly contribute nitrogen to Te Waihora/ Lake Ellesmere.

11.317 Rules 11.5.11 and 11.5.12 provide the activity status for activities that are not able to meet one or more conditions of the relevant rules. Again, they are strongly modelled on the region-wide provisions and the non-complying and prohibited activity status under those region-wide provisions. There do not appear to be any compelling RMA reasons to move away from the established framework, which gives effect to the NPSFM, RPS and pLWRP frameworks of strongly discouraging any further degradation of over-allocated water bodies.

Recommendation R 11.5.10

Retain Rules 11.5.10 – 11.5.12 without amendment.

Policy 11.4.17 and Rule 11.5.13

11.318 Policy 11.4.17 reads:

> *11.4.16 Despite Policy 11.4.14 and 11.4.15, from 2037 no property or farming enterprise shall leach more than 80 kg of nitrogen per hectare per annum.*

11.319 Rule 11.5.13 reads:

> *11.5.13 From 1 January 2037, the use of land for a farming activity or farming enterprise where the nitrogen loss calculation for the property is greater than 80 kg per hectare per annum is a prohibited activity.*

11.320 Rule 11.5.13 attracted a number of submissions.

11.321 Six submissions in support were received from submitters such as Forest and Bird, The Crossing Ltd and NZ King Salmon. No submissions were received in total opposition; a number were received requesting amendments.

11.322 Ellesmere Irrigation Society Inc requests to amend the date of 1 January 2037 to 2025. This decision is requested by other submitters such as Nga Rūnanga and Te Rūnanga O Ngāi Tahu. Malvern Hills Protection Society and M. & A. Hamblett seek an earlier unspecified timeframe.

11.323 Malvern Hills Protection Society seeks a reduction from 80kgs to 50kgs. M & A Hamblett seek an unspecified reduction.

11.324 Fish and Game seeks further research. Fish and Game state this limit may be too high to achieve the desired catchment targets and limits in the Variation. Fish and Game opposes the limit at its current level.

11.325 Ravensdown requests amending the activity to non-complying. The submitter states that the prohibitive status is overly restrictive, unnecessary and inappropriate.

11.326 While somewhat speculative as to the environment and legislative framework in 2037, the limit set in this policy and rule represents the present knowledge of maximum feasible mitigation on the most permeable soils in the sub-regional area. It is recommended to be retained, on the basis that it sets a long-term indication of the management required to meet the nitrogen loss target.

Recommendation R 11.4.17 and 11.5.13

Retain Policy 11.4.17 and Rule 11.5.13 without amendment.

Rule 11.5.16 and 11.5.17

11.327 Rules 11.5.16 and 11.5.17 read:

11.5.16 The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA, in the Selwyn Waihora catchment, is a permitted activity, provided the following condition is met:

1. The land use activity associated with the discharge is authorised under Rules 11.5.6 to Rule 11.5.14.

11.5.17 The discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA, in the Selwyn Waihora catchment and does not meet Rule 11.5.15 or Rule 11.5.16 is a non-complying activity.

11.328 Rule 11.5.16 received a small number of submissions, including NZ King Salmon, in support.

11.329 ANZCO & CMP seek the following amendments Rule 11.5.16 (or similar):

"11.5.16 The discharge...the following condition s ~~is~~ are met:

1. ...; or

2. The discharge is permitted by another rule authorising the discharge of nitrogen, phosphorus, sediment and microbial contaminants onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA."

11.330 As with the region-wide provisions, Rules 11.5.16 and 11.5.17 authorise diffuse discharges from "approved" land use activities. The amendment sought by ANZCO and CMP appears superfluous, as it appears to seek to authorise discharges that are subject to control under another rule.

Recommendation R 11.5.16

Retain Rules 11.5.16 – 11.5.17 without amendment.

Rule 5.164

11.331 Rule 5.164 reads follows:

5.164 The introduction or planting of any plant, or the removal or disturbance of existing vegetation in, on or under the bed of a lake or river that does not comply with one or more of the conditions ~~1,3 or 5 to 7~~ of Rule 5.163, excluding conditions 2 and 4, is a restricted discretionary activity.

11.332 Christchurch City Council submitted in support of the amendments to Rule 5.164 of the pLWRP. No other submissions were received. No amendments are recommended.

Recommendation R 5.164

Retain without amendment.

Additional Amendments

11.333 A number of submitters sought specific amendments that do not easily fit under one of the above topics. These include (with comments):

11.334 Dairy NZ and Fonterra seek to include a new policy: "*Reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from the discharge of animal effluent and the use of land for the management of animal effluent by requiring all collection, storage and treatment systems for animal effluent installed or replaced after 1 January 2014 to adhere to the Farm Dairy Design Standard and Code of Practice [2013].*"

11.335 While this would provide helpful clarity, it is covered in Schedule 24 and in this manner gives effect to region-wide policies 4.13 and 4.14. A specific policy just in this sub-regional section is not considered a necessary amendment as it is addressed adequately elsewhere in the pLWRP.

11.336 R Duncan questions how CRC will deal with changes to OVERSEER estimates for both phosphorus and nitrogen, with different versions of OVERSEER, and questions the ability of all parties to manage under the tools available.

11.337 J Townshend and K Townshend seek to amend the rules that rely on use of OVERSEER so there is a buffer in the modelling which is directly linked to the consents allowing fluctuations that OVERSEER does not account for.

11.338 Issues to do with Overseer updating and inaccuracies were debated extensively in the hearings on the region-wide provisions of the pLWRP. Adjustments to rules and definitions were made to the region-wide provisions to account for these matters, and are considered to be functioning effectively to date. Accordingly, a different regime for the Selwyn Te Waihora sub-region is not necessary or desirable.

11.339 R Duncan also states that the plan should provide for farm-scale improvements to be connected to catchment loads.

11.340 The submitter does not request a specific decision and any possible relief is unclear. The submitter may expand on the decision sought at the hearing.

11.341 The Director General of Conservation seeks to add an inanga spawning site in the Waikekewai Creek as an addition to Schedule 17 (Waikekewai Creek: at or about map co-ordinates Easting 2458600, Northing 5705400). The submitter states that Schedule 17 of the pLWRP contains a limited list of inanga spawning sites from national records and significant habitats for Canterbury mudfish should also be added to the schedule (attached in Appendix B of the Director General of Conservation's hard copy submission).

11.342 As has been noted in the legal analysis part of this Section 42A Report, Schedule 17 of the pLWRP is not a part of the Variation, and changes to it are not considered to be within the scope of the Variation.

12 Cultural Landscape/Values Management Area

12.1 The genesis of the Cultural Landscape/Values Management Area has been addressed in the Zone Committee section of this Section 42A Report. In addition, the legal basis for such an Area is considered in the legal analysis section of this Section 42A Report. In the context of this analysis, it is appropriate to consider the statutory weight given by higher level documents, especially the NPSFM, to the involvement of iwi in decision making in relation to water.

12.2 The relevant NPSFM objectives and policies include:

Objective D1 *To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.*

Policy D1 *Local authorities shall take reasonable steps to:*

a) involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region;

b) work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region; and

c) reflect tāngata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region

12.3 Objective 12.2.2 of the RPA introduced cultural landscapes, and they are also referenced in Policy 13.3.3, in relation to historic cultural and historic heritage landscapes:
"Significant historic cultural and historic heritage landscapes are to be protected from inappropriate subdivision, use and development. When determining the significance of values of historic cultural or historic heritage landscapes, the following matters will be considered…"

12.4 Ngāi Tahu identify Te Waihora as a tribal taonga. Variation 1 recognises the cultural significance of Te Waihora and enables the protection and management of the area as one site, as the Cultural Landscape/Values Management Area.

12.5 Cultural landscapes, as discussed by Dyanna Jolly (attached as Appendix D) and in the cultural context part of this Section 42A Report, are landscapes that reflect the strength of the connection of tangata whenua to place. The impetus for protecting these landscapes is to preserve the relationship between Maori and their ancestral lands.

12.6 The provisions contained in Variation 1 reflect Ngai Tahu values in the management of the Selwyn Te Waihora sub-regional area. The policy regime and rule framework of Variation 1, in relation to the Cultural Landscape/Values Management Area, provide for a management regime that reflects the values of Ngāi Tahu and the values, policy and outcomes of the Mahaanui Iwi Management Plan 2013.

12.7 In addition, the RPS provides strong policy guidance to protect the values of waterbodies, and their riparian areas:

Objective 10.2.1 Provision for activities in beds and riparian zones and protection and enhancement of bed and riparian zone values

Enable subdivision, use and development of river and lake beds and their riparian zones while protecting all significant values of those areas, and enhancing those values in appropriate locations.

Policy 10.3.1 Activities in river and lake beds and their riparian zones

To provide for activities in river and lake beds and their riparian zones, including the planting and removal of vegetation and the removal of bed material, while:

(1) recognising the implications of the activity on the whole catchment;

(2) ensuring that significant bed and riparian zone values are maintained or enhanced; or

(3) avoiding significant adverse effects on the values of those beds and their riparian zones, unless they are necessary for the maintenance, operation, upgrade, and repair of essential structures, or for the prevention of losses from floods, in which case significant adverse effects should be mitigated or remedied.

Policy 10.3.2 Protection and enhancement of areas of river and lake beds and their riparian zones

To preserve the natural character of river and lake beds and their margins and protect them from inappropriate subdivision, use and development, and where appropriate to maintain and/or enhance areas of river and lake beds and their margins and riparian zones where:

(1) they exist in a degraded state and enhancement will achieve long-term improvement in those values;

(2) they have ecological values for which protection and/or enhancement will assist in the establishment or re-establishment of indigenous biodiversity or ecosystems, particularly for ecosystems that are threatened or unrepresented in protected areas;

(3) they have existing significant trout or salmon habitat;

(4) maintenance and/or enhancement will improve or establish connections between habitats and create corridors for indigenous species and trout and salmon and their movement between areas;

(5) riparian zones provide a buffer from activities that may adversely affect bed values;

(6) opportunities exist to create habitat corridors for plants and animals; or

(7) riparian zones provide spawning or other significant habitats for at risk or threatened species, such as inanga or Canterbury mudfish.

Objective 7.2.3 Protection of intrinsic value of waterbodies and their riparian zones

The overall quality of freshwater in the region is maintained or improved, and the life supporting capacity, ecosystem processes and indigenous species and their associated fresh water ecosystems are safeguarded.

12.8 In general, the Cultural Landscape/Values Management Area has attracted a large number of submissions, in support, in opposition, or requesting changes. Due to the similar nature of many of the rules and the subsequent submissions, the analysis below considers groups of policies and rules, and the submissions received, rather than individually, and repetitively, addressing individual provisions.

12.9 It is noted that the Introduction to Section 11 – Selwyn Te Waihora does not explicitly identify or explain the Cultural Landscape/Values Management area and associated policies and rules. Refer to the discussion on the Selwyn Te Waihora Introduction for further comment on the context of the Cultural Landscape/Values Management Area.

Definition

12.10 The definition of the Cultural Landscape/Values Management Area reads:

means the area of Land comprising the Lake Zoe [sic] and River Zone identified in section 11.8

12.11 No submissions where received on the definition of Cultural Landscape/Values Management Area.

Recommendation R Cultural Landscape/Values Management Area Definition

That the definition of the Cultural Landscape/Values Management Area be amended to read:

means the area of Land comprising the Lake Zone[149] *and River Zone identified in section 11.8*

Policies 11.4.2 to 11.4.5 and 11.4.9

12.12 The following policies establish and enable the Cultural Landscape/Values Management Area:

11.4.2 In recognition of the importance of the entire catchment to Ngāi Tahu, actively manage the Selwyn Waihora catchment to enable Ngāi Tahu to exercise kaitiakitanga in the management of fresh water.

11.4.3 Establish and maintain a Cultural Landscape/Values Management Area that encompasses Te Waihora, its margins, wetlands, springs and tributaries to:

(a) recognise the nature, concentration, networks and significance to Ngāi Tahu of sites and values within the Area; and

(b) provide for the relationship of Ngāi Tahu with Te Waihora/Lake Ellesmere.

11.4.4 Manage the Cultural Landscape/Values Management Area:

[149] Cl 16 – Minor correction

(a) as one integrated freshwater mahinga kai system with outstanding values;
(b) to protect mahinga kai, wāhi tapu and wāhi taonga;
(c) to restore the health of Te Waihora/Lake Ellesmere; and
(d) to recognise the cultural and ecological sensitivity of the Area to discharges of contaminants and the taking and use of fresh water.

11.4.5 Recognise and protect the Waikekewai Creek and Taumutu Creek as wāhi tapu and prohibit the abstraction of surface water or groundwater takes with a direct or high stream depletion effect on Waikekewai Creek or Taumutu Creek.

11.4.9 In circumstances where the treatment or discharge of sewage sludge, bio-solids and treated sewage effluent from a community wastewater system is within the Cultural Landscape/Values Management Area there shall be no direct discharge to surface water or groundwater or any discharge to land in circumstances where contaminants may enter water.

12.13 The policy regime identified in Variation 1 recognises the role of Ngāi Tahu as kaitiaki of the Selwyn Te Waihora catchment. The policies establish the Cultural Landscape/Values Management Area and define the management techniques to protect and enhance the catchment.

12.14 The Cultural Landscape/Values Management Area policies received a number of submissions, which identify similar issues, but overall support. Submitters including Te Taumutu Rūnanga, Fish and Game, Forest and Bird, The Crossing, the Director General of Conservation and Christchurch City Council are among the supporters of the policies. Some submitters requested amendments and these are discussed further below.

12.15 Selwyn DC, D Hasson, B & A Moir, J Greenslade and M & N Dulieu request the recognition of existing communities, such as the Upper Selwyn Huts, and existing and established infrastructure such as land drainage schemes, in Policies 11.4.3 and 11.4.4.

12.16 It is considered that the suggested amendment is not consistent with the intent of the Cultural Landscape/Values Management Area and is not a justification or reasoning for the establishment and maintenance of a Cultural Landscape/Values Management Area, which is the focus of these policies. Region-wide policies are considered to adequately cover the management of infrastructure, discharges and urban areas.

12.17 Te Taumutu Rūnanga requests amendments to Policy 11.4.5 to read*: "Recognise and protect <u>the wāhi tapu values associated with the Waikekewai waterway</u>, by prohibiting the abstraction of surface water or groundwater takes with a direct or high stream depletion effect on Waikekewai Creek or Taumutu Creek."*

12.18 This amendment will clarify that the prohibition is to protect the wāhi tapu values of the catchment, rather than simply recognising the catchment as wāhi tapu. While possibly a matter of semantics, the more correct terminology is preferred.

12.19 Ellesmere Irrigation Society requests amendments Policy 11.4.5 to read: "*Recognise and protect the Waikekewai Creek and Taumutu Creek as wāhi tapu and prohibit the abstraction of surface water or groundwater takes with a direct or high stream depletion effect on Waikekewai Creek or Taumutu Creek from 1 July 2025 when existing consents expire.*"

12.20 Irrigation NZ requests amendments to Policy 11.4.5 to give existing consent holders time to find new cost effective options for irrigation supply by amending Policy 11.4.5 as follows: *"…. and prohibit ~~the~~ any new and phase out existing abstraction…".*

12.21 The prohibition of water takes from Waikekewai and Taumutu Creeks has raised a number of submissions on the implementation of this regime. Primarily, the question has arisen with respect to the date at which existing resource consents to take water will be affected. It is understood that the intention of the Policy and Rule framework is that the restriction will apply on the expiry of existing consents, prevent any new consents being granted and, in any event, all such takes will cease from 2025. It is possible that the intention of this framework could be misunderstood in the wording of the Policy and Rules, and on this basis adjustments are recommended to improve the clarity of the Policy and Rules.

12.22 Selwyn DC is concerned with the potential effects on discharges, and seeks amendments to Policy 11.4.9 to read: *"… shall be no direct discharge to surface water ~~or groundwater or any discharge to land in circumstances where contaminants may enter water"~~*. Or as an alternative "*… shall be no direct discharge to surface water or groundwater. Any discharge to land from an existing activity in circumstances where contaminants may enter water shall utilise the best practicable option in managing the discharge.*"

12.23 Forest and Bird seeks to amend Policy 11.4.9 and add a sentence to the end of policy to read: "*…these limits will be reviewed within 5 years…*"

12.24 The amendments Selwyn DC seek would have the effect of limiting the application of the policy for existing discharges. This would be a significant constraint in this sensitive area, and not practically improve the current discharges above the performance level expected by the region-wide policies of the pLWRP. On this basis, the amendments are not supported.

Recommendation R 11.4.2

Retain Policy 11.4.2 without amendment.

Recommendation R 11.4.3

Retain Policy 11.4.3 without amendment.

Recommendation R 11.4.4

Retain Policy 11.4.4 without amendment.

Recommendation R 11.4.5

Amend Policy 11.4.5 to read:

> *11.4.5 Recognise and protect the wāhi tapu values associated with the Waikekewai waterway by prohibiting*[150] *~~Waikekewai Creek and Taumutu Creek as wāhi tapu and~~ prohibit any new and phase out existing ~~the~~*[151] *abstraction of surface water or groundwater takes with a direct or high stream depletion effect on Waikekewai Creek or Taumutu Creek, such that all existing abstraction ceases no later than 1 July 2025*[152]*.*

Recommendation R 11.4.9

Retain Policy 11.4.9 without amendment.

Rules 11.5.1-11.5.5, 11.5.27, and 11.5.28

12.25 The rules referring to Cultural Landscape/Values Management Area are additions to pLWRP Regional Rules.

12.26 Rule 11.5.1 states (Regional Rule 5.8 relates to new or upgraded onsite domestic wastewater discharges):

> *11.5.1 Within the Selwyn Waihora catchment Regional Rule 5.8 shall include the following additional condition:*
>
> *1. The discharge of wastewater from a new on-site domestic wastewater treatment system is not within the Cultural Landscape/Values Management Area.*

12.27 Rule 11.5.2 states (Regional Rule 5.9 relates to existing onsite domestic wastewater discharges):

> *11.5.2 Within the Selwyn Waihora catchment Regional Rule 5.9 shall include the following additional matter of discretion:*
>
> *1. Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.*

12.28 Rule 11.5.3 states (Regional Rule 5.26 relates to offal pits and Regional Rule 5.28 relates to on-site refuse disposal pits):

> *11.5.3 Within the Selwyn Waihora catchment Regional Rule 5.26 and 5.28 shall include the following additional matter of discretion:*
>
> *1. Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.*

[150] V1pLWRP-263 - Te Taumutu Rūnanga
[151] V1pLWRP-1054 - Irrigation NZ
[152] V1pLWRP-471 - Ellesmere Irrigation Society

12.29 Rule 11.5.4 states (Regional Rule 5.36 relates to animal effluent discharges):

11.5.4 Within the Selwyn Waihora catchment Regional Rule 5.36 shall include the following additional matter of discretion:

1. Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.

12.30 Rule 11.5.5 states (Regional Rule 5.40 relates to silage pits):

11.5.5 Within the Selwyn Waihora catchment Regional Rule 5.40 shall include the following additional matter of discretion:

1. Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.

12.31 Rule 11.5.27 states (Regional Rule 5.93 relates to stormwater/stormwater management plans):

11.5.27 Within the Selwyn Waihora catchment Regional Rule 5.93 shall include the following additional matter of discretion:

1. Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.

12.32 Rule 11.5.28 states (Regional Rules 5.95(2) and 5.96(2) relate to stormwater discharges):

11.5.28 Within the Selwyn Waihora catchment Regional Rule 5.95(2) and 5.96(2) shall include the following additional condition:

1. The discharge is not within the Lake Area in the Cultural Landscape/Values Management Area.

12.33 A number of the submitters support the Cultural Landscapes/Values Management Area rules. However, the submitters often differ for each rule. Generally, there are three to four submitters seeking retention of each rule. Only a few submitters requested amendments, and these are discussed below.

12.34 Dr Whale is opposed to Rules 11.5.1 and 11.5.3 and seeks to remove the requirement for consent for on-site water treatment. Dr Whale requests amendments to provide a clear articulation on how any objective impact assessments can be made and how decisions may be challenged.

12.35 Christchurch City Council seeks to delete Rule 11.5.27. The submitter states that it supports the intent which ensures tangata whenua values of the rule however, states that it is already included as a requirement of Stormwater Management Plans.

12.36 The pLWRP does not provide substantial consideration of tangata whenua values in Regional Rule 5.93. Therefore it is recommended that the Rule be retained to provide certainty of the recognition of effects on tangata whenua values.

12.37 The Baxter Family opposes restrictions on stormwater discharges from farms. The submitter states that the rule will prohibit them from draining areas of their farm. As Rule 5.95 stands non-reticulated stormwater discharge is permitted provided:

"…2. The discharge is not into a reticulated stormwater system, and

(a) The discharge is not from, into or onto contaminated or potentially contaminated land; and

(b) The discharge is not into:

(i) a water race, as defined in Section 5 of the Local Government Act 2002; or

(ii) a wetland, unless the wetland is part of a lawfully established stormwater or wastewater treatment system; or

(iii) a water body that is Natural State, unless the discharge was lawfully established before 1 November 2013; and

(c) The discharge does not result in an increase in the flow in the receiving water body at the point of discharge of more than 1% of a flood event with an Annual Exceedance Probability AEP650 of 20% (one in five year event);

(d) The discharge meets the water quality standards in Schedule 5 after reasonable mixing with the receiving waters, in accordance with Schedule 5; and

(e) The concentration of total suspended solids in the discharge shall not exceed:

(i) 50 g/m^3, where the discharge is to any spring-fed river, Banks Peninsula river, or to a lake except when the background total suspended solids in the water body is greater than 50 g/m3 in which case the Schedule 5 visual clarity standards shall apply; or

(ii) 100 g/m^3 where the discharge is to any other river or to an artificial watercourse except when the background total suspended solids in the water body is greater than 100 g/m3 in which case the Schedule 5 visual clarity standards shall apply; and

(f) The discharge to water is not within a Group or Community Drinking water Protection Zone as set out in Schedule 1."

12.38 Rule 5.96, which relates to groundwater has a similar construct. The intent of these rules is to permit what are usually relatively minor and clean discharges of stormwater. These may be very benign, given the broad definition of stormwater in the pLWRP, which would include water from roofs, farm buildings and impervious surfaces such as roads and footpaths. By including a requirement in these Rules that all such discharges within the Lake Zone of the Cultural Landscape/Values Management Area obtain resource consent, a very large number of discharge consents would be required for "ordinary" stormwater discharges which would not require any treatment or other management. On this basis, the proposed amendments to Rules 5.95 and 5.96 are recommended to be deleted.

12.39 Ellesmere Irrigation Society seeks to delete the rules unless the Cultural Landscape/Values Area is reduced to 10m from the edge of Lake Ellesmere/Te Waihora.

12.40 In addition to the above, there are a number of submitters who request that no additional requirements be placed on their land, despite being in the Cultural Landscape/Values Management Area. A small number of other submitters, including Lochlea Farming, oppose the Cultural Landscape/Values Management Area entirely. These submissions would have the effect of either removing the Cultural Landscape/Values Management Area entirely, or reducing its effects and obligations on land owners.

12.41 This matter is discussed in the report of Dyanna Jolly and the cultural values part of this Section 42A Report. The reasons for the Cultural Landscape/Values Management Area are well set out in these reports, and the removal of the area or removal of relevant rules would have the effect of rendering the area almost meaningless. It would not achieve the objectives of the pLWRP, particularly Objective 3.1: *Land and water are managed as integrated natural resources to recognise and enable Ngāi Tahu culture traditions, customary uses and relationships with land and water.*

12.42 The establishment of the Cultural Landscape/Values Management Area is discussed in the Section 32 report, the Zone Committee section of this Section 42A Report, and is consistent with the RPS, the Mahaanui Iwi Management Plan 2013 (see Policies CL1.1 –CL1.9). The Iwi Management Plan provides policies that require local government to give effect to cultural landscapes in policy, planning and decision making (Policy CL1.2), and to enhance cultural landscapes and cultural values. Therefore, the Cultural Landscape/Values Management Area gives effect to the Iwi Management Plan and it is recommended that the provisions be retained.

12.43 Overall, these submissions are recommended to be rejected, and the inclusion of policies and rules, along with mapping, for the Cultural Landscape/Values Management Area is recommended to continue.

Recommendation R 11.5.1

Retain Rule 11.5.1 without amendment.

Recommendation R11.5.2

Retain Rule 11.5.2 without amendment.

Recommendation R 11.5.3

Retain Rule 11.5.3 without amendment.

Recommendation R 11.5.4

Retain Rule 11.5.4 without amendment.

Recommendation R 11.5.5

Retain Rule 11.5.5 without amendment.

Recommendation R 11.5.27

Retain Rule 11.5.27 without amendment.

Recommendation R 11.5.28

Delete Rule 11.5.28.

Rule 11.5.19 & Rule 11.5.20

12.44 Rules 11.5.19 and 11.5.20 state:

11.5.19 Within the Selwyn Waihora catchment Regional Rule 5.68 shall include the following additional condition:

1. The activity is not within the Cultural Landscape/Values Management Area.

11.5.20 Within the Selwyn Waihora catchment Regional Rule 5.71 shall include the following additional condition:

1. In the Cultural Landscape/Values Management Area.

12.45 Rule 5.68 provides for the "*use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water is a permitted activity provided conditions are met:..."*

12.46 Rule 5.71 provides for the *"use and disturbance of the bed (including the banks) of a lake or river by any farmed cattle, farmed deer or farmed pigs and any associated discharge to water is a prohibited activity in the following areas:…"*

12.47 The addition of Rules 11.5.19 and 11.5.20 excludes the Cultural Landscape/Values Management Area as a permitted activity for the use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water, and makes these activities prohibited.

12.48 A number of submissions were received on Rules 11.5.19 and 11.5.20.

12.49 Various submitters including the Director General of Conservation, Christchurch City Council, Fish and Game, J Snoyink, and Forest and Bird request the retention of the rules without amendments.

12.50 Ellesmere Irrigation Society seeks to delete the Rules. This submission is in regard to all stock exclusion rules and not primarily the Cultural Landscapes/Values Management Area.

12.51 A large number of submitters generally oppose greater restriction of activities within the Cultural Landscape/Values Management Area. These submissions are discussed in relation to other submissions on the Cultural Landscape/Values Management Area.

12.52 Stock exclusion from water bodies has been a much-debated issue in the catchment – this matter is also addressed under the stock-exclusion part of this Section 42A Report. In a large part, the issue is settled, in favour of stock exclusion in such sensitive areas. On this basis, the submissions in opposition are recommended to be rejected. There remains some doubt about practicality with respect to small and ephemeral streams in the Banks Peninsula area of the Cultural Landscape/Values Management Area. However, this is largely addressed by the recommended clarification of the extent of the Cultural Landscape/Values Management Area (see discussion below).

Recommendation R 11.5.19

Retain Rule 11.5.19 without amendment.

Recommendation R 11.5.20

Retain Rule 11.5.20 without amendment.

Rule 11.5.43 and Definition of Drainage Management Plan

12.53 Rule 11.5.43 states:

> *11.5.43 Within the Selwyn Waihora catchment Regional Rule 5.163 shall include the following additional condition:*
>
> *1. Where the activity involves the removal of existing vegetation by or on behalf of a local authority within the Cultural Landscape/Values Management Area the activity is undertaken in accordance with a Drainage Management Plan.*

12.54 The definition of Drainage Management Plan reads:

> *means a written document that includes information as to how removal of vegetation in on or under the bed of a lake or river will be undertaken to manage adverse effects on mahinga kai, wāhi tapu and wāhi taonga within the Cultural Landscape/Values Management Area.*

12.55 Rule 11.5.43 has attracted a number of submissions and further submissions.

12.56 A Florence seeks to delete the conditions of Rule 11.5.43 to allow for the removal and planting of vegetation along drains as a permitted activity for the purpose of maintenance and drain cleaning by the property owner.

12.57 The Baxter Family, B and A Moir and J Greenslade oppose restrictions on drain clearing and maintenance.

12.58 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks to delete the definition of "Drainage Management Plan" and replace with a new schedule within the Plan which sets out the matters which the management plan should address:

"Schedule X

Drainage Management Plans

1. The location of the waterways subject to this plan; and

2. The works to be covered by this plan (i.e. vegetation removal, sediment removal, bank re-contouring); and

3 The identification and mitigation of the effects of the proposed works covered by this plan); and...."

12.59 The additional schedule sought by Nga Rūnanga and Te Rūnanga o Ngai Tahu contains a number of specific requirements for the drainage management plan. Many of these are sensible suggestions. However, including them in a new schedule is possibly not the best solution, as the additional text could be amalgamated with the definition and included as a more substantial rule within the Selwyn-Te Waihora section. On this basis, the submission is recommended to be accepted in part through the deletion of the definition of drainage management plan and incorporation of the issues raised in the submission and the definition within a revised Rule 11.5.43.

12.60 Christchurch City Council seeks to amend Rule 11.5.43 as follows: *"Within the Selwyn-Waihora catchment Regional Rule 5.163 shall include the following additional condition: 1. Where the maintenance activity involves the removal of existing vegetation..."*

12.61 From the submissions, it would appear that there is some confusion as to the application of Rule 11.5.43, in respect of drains and artificial water courses. The additional requirement to the pLWRP rules relates to Rule 5.163. Rule 5.163 restricts vegetation clearance in lakes, rivers and wetlands. These are natural watercourses, and accordingly the rule does not apply to drains and artificial watercourses. Rule 5.79, which lists the clearing of artificial water courses as a permitted activity, subject to performance standards, would continue to apply in this area.

Recommendation R 11.5.43

Amend Rule 11.5.43 to read:

11.5.43 Within the Selwyn Waihora catchment Regional Rule 5.163 shall include the following additional condition:

1. Where the activity involves the removal of existing vegetation by or on behalf of a local authority within the Cultural Landscape/Values Management Area the activity is undertaken in accordance with a Drainage Management Plan that identifies:

(a) The works to be authorised by the Plan; and

(b) The identification and mitigation of the effects on mahinga kai, wāhi tapu and wāhi taonga.[153]

Recommendation R Drainage Management Plan Definition

That the definition of Drainage Management Plan be deleted.[154]

Table 11(n) & Mapping

12.62 Table 11(n) states:

Table 11(n): Cultural Landscape/Values Management Area

	Location
Lake Area	*The Area that encompasses Te Waihora/Lake Ellesmere, its margins and wetlands identified as the Te Waihora Cultural Landscape/Values Lake Management Area as shown on the Planning Maps.*
River Zone	*20 metres each side of the following rivers (from their source through to the lake, unless otherwise specified) as shown on the Planning Maps. 20 metres is measured from the edge of the river bed:* *Waikirikiri/Selwyn River, below the confluence with the Hawkins River;* *Waikekekewai;* *Birdlings Brook;* *Te Raki;* *Waitatari/Harts Creek;* *Boggy Creek;* *Waiwhio/Irwell River;* *Silverstream;* *Ararira/LII River;* *Huritini/Halswell River;* *Kaituna River;* *Prices Stream; and* *Waikoko Stream*

12.63 Several submitters submitted on Table 11(n) and are considered also in relation to the maps. A number of submissions were received on policies and rules in terms of the location or size of the Cultural Landscape/Values Management Area, and have been assessed here.

12.64 A number of submissions request a reduction in the size of the Cultural Landscape/Values Management Area. Submitters, such as G Bonniface and Ellesmere Irrigation Society, request that the 20 metre strip be amended to 10 metre for rivers. Both submitters question the methodology/logic surrounding the creation of the boundary and request a revised boundary of 10 metres from Te Waihora/Lake Ellesmere lake edge and Coopers

[153] V1pLWRP-458 - Nga Rūnanga and Te Rūnanga O Ngāi Tahu
[154] V1pLWRP-456 - Nga Rūnanga and Te Rūnanga O Ngāi Tahu

Lagoon. Other submitters such as B & A Moir, and J Greenslade request that the 20 metre strip for rivers be amended to 5 metres.

12.65 The width of the Cultural Landscape/Values Management Area in relation to the lake and in relation to the listed rivers in Table 11(n) is discussed fully in the report of Dyanna Jolly. The reduction of the width of the lake area to 10 metres would have a significant implication for the recognition of Ngāi Tahu cultural values immediately around the lake. The current area has been identified through a consultation process with Ngai Tahu and Taumutu Rūnanga, with all parties being mindful of the implications. This matter is discussed more fully in the Zone Committee section of the Section 42a report. With respect to rivers, the width of the area alongside the listed rivers is potentially somewhat arbitrary. Dyanna Jolly has listed the reasons why the 20 metres has been chosen, and it would appear reasonable and consistent with other planning documents. On this basis, the requests to reduce the lake area and area adjacent to rivers are recommended to be rejected.

12.66 The other issue that received a number of submissions is the clarification of the River Zone and deletion or amendments to the River Zone. Selwyn DC requests deleting the reference to 20 metres from the River Zone. Ellesmere Irrigation Society seeks to delete some waterways from the River zones for example Selwyn River, Boggy Creek, and Birdlings Brook. Ellesmere Irrigation Society highlights an issue with no identified River Zone shown on the planning maps

12.67 Other similar amendments are suggested by submitters regarding reduction of the width for the Halswell River (H Macartney); and the inclusion of the river source in the planning maps (D Hasson, B & A Moir, J Greenslade).

12.68 A number of submitters have requested mapping of the Cultural Landscape/Values Management Area with respect to rivers. Table 11(n) lists a number of rivers, but does not specify their precise location or the extent of the rivers. There is potentially some confusion as the list does not specify whether it applies to tributaries, ephemeral areas in the hill country, particularly of Banks Peninsula, or the source with respect to spring fed lowland streams.

12.69 Mapping would possibly enhance clarity and certainty with respect to the Cultural Landscape/Values Management Area with respect to these rivers. However, there are a number of other planning regimes that apply to these rivers and that specify setbacks for various activities, including in the pLWRP and the Selwyn District Plan, which do not rely on mapping.

12.70 On this basis, it is suggested that greater clarity could be achieved through specifying that the listed rivers include all tributaries and that the Cultural Landscape/Values Management Area does not apply to ephemeral tributaries of these rivers. Given this additional certainty and the existing planning regimes specifying setbacks from these water bodies, mapping is not considered necessary.

Recommendation R Table 11(n)

That Table 11(n) be amended as follows:

Table 11(n): Cultural Landscape/Values Management Area

	Location
Lake Area	*The Area that encompasses Te Waihora/Lake Ellesmere, its margins and wetlands identified as the Te Waihora Cultural Landscape/Values Lake Management Area as shown on the Planning Maps.*
River Zone	*20 metres each side of the following rivers (from their source through to the lake, unless otherwise specified, but excluding all ephemeral tributaries) ~~as shown on the Planning Maps~~[155]. 20 metres is measured from the edge of the river bed:* *Waikirikiri/Selwyn River, below the confluence with the Hawkins River;* *Waikekekewai;* *Birdlings Brook;* *Te Raki;* *Waitatari/Harts Creek;* *Boggy Creek;* *Waiwhio/Irwell River;* *Silverstream;* *Ararira/LII River;* *Huritini/Halswell River;* *Kaituna River;* *Prices Stream; and* *Waikoko Stream*

Recommendation R Mapping

That the planning maps in relation to the Cultural Landscape/Values Lake Management Areas are retained without amendment.

Proposed additions

12.71 Te Taumutu Rūnanga requests the addition of a new title above Policies 11.4.1 to 11.4.5 to read:
"Ngai Tahu values in catchment management."

12.72 The heading suggestion may assist some parties in the interpretation of this set of policies. Accordingly, it is recommended that it be included after Policy 11.4.1.

12.73 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seek to amend the Variation to replace Policies 11.4.6 to 11.4.17 with the following
"1. (a) In recognition that Te Waihora/Lake Ellesmere is a taonga and of immense importance to Ngāi Tahu and to ensure that the Mauri of Te Waihora/Lake Ellesmere is

[155] V1pLWRP-920 - Ellesmere Irrigation Society

resorted and the water quality outcomes are met within the Selwyn-Te Waihora catchment, over time reduce the amount of contaminants entering Te Waihora/Lake Ellesmere so that a TLI score of 4.8 is achieved; and

(b) As a first step towards achieving the water quality outcomes with the Selwyn-Te Waihora Catchment the total amount of nitrogen entering the catchment is limited to that set out within Table 11 (i).

2. Reduce the discharge of contaminants entering the catchment from wastewater systems by:

(a) Prohibiting the discharge of untreated wastewater, liquid waste or sludge waste from either community, industrial or trade process or on-site domestic wastewater systems directly to groundwater or surface waterways;

(b) From 2025 prohibiting the discharge of treated wastewater, liquid waste or sludge waste from either community, industrial or trade process or on-site domestic wastewater systems directly to groundwater or surface waterways;

(c) Enabling the discharge of treated wastewater, liquid waste or sludge waste from either community, industrial or trade process or on-site domestic wastewater systems to land provided:

(i) On-site domestic wastewater systems which existed as of 13 February 2014 comply with Section 6.3 of New Zealand Standards AS/NZS 1547:2002 - On-site Domestic Wastewater Management by 1 January 2019;

(ii) All new on-site domestic wastewater systems comply with Section 6.3 of New Zealand Standards AS/NZS 1547:2002 - On-site Domestic Wastewater Management;

(iii) Community and industrial or trade process wastewater systems which existed as of 13 February 2014 have adopted Best Practicable Options to meet load limit by 1 January 2019; and

(iv) All new community or industrial or trade process wastewater systems to meet the load limit.

3. Reduce the loss of contaminants from farming activities into the catchment by:

(a) Excluding livestock from all waterways, including drains; and

(b) Providing setbacks from grazing and cultivation from waterways and where appropriate riparian planting.

(c) Requiring all farming practices to implement the good management practices listed in Schedule 24 to minimize the loss of contaminants into water;

(d) Avoiding any increase in nitrogen-nitrate loss is the estimated nitrogen loss from a farm estimated using OVERSEER ® is greater than 15kg/ha/year; and

(e) Requiring those framings practices with nitrogen-nitrates losses which are estimated using OVERSEER ® to exceed 15kg/ha/yr to progressively reduce their nitrogen-nitrate losses in accordance with Policy 4.

4. (a) By 1 July 2016 include by way of a plan change a schedule of maximum nitrogen loss rates for farm activities on soil types within the catchment, which farming activities must comply with by 2022; or

(b) If no such schedule exists then from 01 July 2017 limit the loss of nitrogen-nitrates from farming activities which are estimated using OVERSEER ® to exceed 15kg/ha/year in the following way:

(i) Avoid any increase in estimated nitrogen loss from any farming activity whose estimated nitrogen loss using OVERSEER ® is greater than 15kg/ha/year; and

(ii) Prohibit any farming activity having nitrogen losses estimated using OVERSEER ® which exceed 80kg/ha/year.

5. Require rural activities to either prepare and implement a nutrient budget using OVERSEER ® (or an alternative method) or keep sufficient records as per Schedule X to enable a nutrient budget to be prepared using OVERSEER ® or an alternative method).

6. To progressively implement Farm Environment Plans within the catchment where the discharge from the farming activity or farm enterprise discharge is greater than 15kg/ha/year:

(a) For farming activities or farm enterprise, greater than 10ha in area and located within the Cultural Landscape/Values Management Area, require Farm Environment Plans from 1 January 2016;

(b) For farming activities or farm enterprise, greater than 50ha in area and located outside the Cultural Landscape/Values Management Area, require Farm Environment Plans from 1 January 2017;

(c) For farming activities or farm enterprise, less than 50ha but greater than 10ha in area and located outside the Cultural Landscape/Values Management Area, require Farm Environment Plans from 1 January 2020.

7. The Farm Environment Plans prepared in accordance with Schedule 7 will:

(a) Where the current nitrogen discharge rate exceeds 15kg/ha/year

(i) Practices to be implemented over a specified timeframe which will ensure that the discharge is not more than the nitrogen/phosphorus discharge loss rate as calculated using either the Matrix of Good Management or an alternative method; and

(ii) Practices to be implemented over a specified timeframe which will ensure the discharges are reducing towards achieving a discharge loss of no more than a 15kg/ha/year.

(b) Identify and provide mitigation for any environmental risk of the farming operation;

(c) Identify methods for minimizing sediment loss from the property;

(d) How stock will be excluded from waterways (rivers, streams, drains, wetlands and springs);

(e) Identify and implement methods for ensuring that water is used efficiently;

(f) Identify and implement methods for addressing the effects on water quality from land drainage water."

12.74 The policies identified by Nga Rūnanga and Te Rūnanga o Ngāi Tahu have been advanced as a complete package. Other requested new amendments from Nga Rūnanga and Te Rūnanga o Ngāi Tahu have been discussed against the policies and rules they seek to replace and under the topic they address. Together the policies and rules requested by Nga Rūnanga and

Te Rūnanga o Ngāi Tahu would amend a large portion of the Variation. It is recommended that no recommendation be made until after the evidence is heard on how the package works and what implications it has. It is also noted that a key part of the policy set above is a change to the emphasis with respect to Farm Environment Plans and nutrient budgets, along with committing to a further plan change to introduce a schedule of maximum nitrogen loss rates for farm activities, in a similar manner to various submissions discussed previously. The policies attracted a number of further submissions identifying differing positions. Five further submitters oppose the amendments, three submitters support in part and one opposes in part.

13 Flows and Allocation

Introduction

13.1 Over time land use in the Selwyn Te Waihora catchment has intensified and more water has been abstracted. Low flows in the Selwyn River and lowland spring-fed streams have been lower than in the preceding 10 to 20 years, caused by a combination of climate variation and the effects of surface water and groundwater abstraction. Many streams spend a large proportion of the summer and irrigation season below the flows recommended to protect their ecological values.

13.2 Low base flows have contributed to reduced water quality and reduced ecological health in many lowland streams and rivers. Abstraction has also contributed to an increase in the frequency, extent and duration that some hill-fed rivers and streams go dry.

13.3 Groundwater accounts for approximately 95% of water allocation and 95% of the irrigated area within the catchment. There are many groundwater takes distant from the lowland streams and individually they may not have a measurable effect on flows. But due to the large numbers (over 2000) there is a large cumulative effect on the lowland stream flows. The catchment is currently divided into two Groundwater Allocation Zones and the limits are significantly exceeded (by approximately 35%) in each zone.

13.4 Studies and recent water use data suggest that on average around 50% of the allocated volume of water is used. If all the water that is allocated was abstracted there would be a significantly greater adverse impact on the lowland streams than at present.

13.5 The Zone Committee has identified healthy lowland stream and hill-fed rivers as priority outcomes whilst at the same time providing highly reliable water for irrigation and an increase in irrigated area of 30,000 ha to approximately 140,000 ha in total.

13.6 Through exploring various scenarios the Zone Committee has developed an integrated solution package for achieving these outcomes as far as possible. Central to the solution package is the addition of alpine surface water into the catchment through the Central Plains Water Irrigation Scheme. This will improve the water balance and enable the retirement of a proportion of the groundwater abstraction within the catchment.

Integrated Solution

13.7 The policies and rules within Variation 1 are an integral part of the solution package. The main components which Variation 1 seeks to support are:

- Surface water and groundwater managed and allocated as one “combined resource” across most of the catchment. This is to reflect the interactions between them and that the base flows in the lowland streams are derived from groundwater coming to the

surface via springs and that losses from the hill-fed rivers contribute to recharge of the groundwater system.

- Revised Allocation Zones to account for natural differences in the movement and availability of water within the catchment (including creation of a Little Rakaia Zone) and to provide a structure that allows surface and groundwater to be allocated as a "one resource" and help avoid further over-allocation.
- A change in approach to calculating allocation limits so as to retain low flows of 80 to 90% of the natural 7DMALF[156] in the lowland streams taking into account the addition of alpine water to the catchment and retirement of a portion of groundwater takes. In this way the limits would protect ecological and cultural values.
- Prohibiting further surface and/or groundwater takes where allocation limits are or would be exceeded.
- Managing the risk of transfers of surplus water leading to increased abstraction by preventing Central Plains Water shareholders from transferring their groundwater consents and in other cases requiring 50% of transferred water to be surrendered in zones that are over-allocated.
- Introducing revised minimum flows from 2025 to protect ecological and cultural values in rivers and streams once a healthy water balance is restored and flows have improved.
- Support for the storage of alpine water to enable Central Plains Water to provide its members with a reliable surface water supply that in turn will enable the retirement of a proportion of groundwater abstraction within the catchment and to provide resilience against the potential effects of climate change.
- Redefining water allocation for all takes so that records of past use (moderated for climate driven demand in 8.5 out of 10 years) are taken into account. Records of actual use should allow requirements to be more accurately determined on a case by case basis and contribute to reducing the "paper" allocation of water where users have demonstrably been allocated more water than they need.
- Support for Managed Aquifer Recharge (augmentation of groundwater) and Targeted Stream Augmentation (augmentation of stream flows) to improve flows, water quality and the ecological health of the lowland streams.

Meeting the Allocation Limits and Improving Stream Flows (Rakaia-Selwyn and Selwyn-Waimakariri Zones)

13.8 Allocation limits for the Selwyn-Waimakariri and Rakaia-Selwyn combined surface and groundwater allocation zones are calculated to protect ecological values in the lowland streams. Existing allocation is estimated to significantly exceed the limits by 27% and 64% respectively.

[156] 7DMALF means the 7 day mean annual low flow. It is the long term mean of the lowest seven consecutive days flow recorded in each year and a statistic to describe summer low flow periods. Naturalised flow data are used whereby takes are added back to the flow record to provide a baseline unaffected by abstraction.

13.9 The modelled solution to progressively bring allocation down to the limits (and therefore meet the flow and ecological outcomes) is a package and has the following components:

- Targeted Stream Augmentation (TSA) of 900 L/s in summer and 200 L/s in winter added to the local shallow groundwater system above the lowland streams in the Rakaia-Selwyn Combined Surface and Groundwater Allocation Zone;
- Managed Aquifer Recharge (MAR) 2m^3/s supplied to the groundwater system across the top of the upper plains area in winter when alpine water is most likely to be available;
- 60,000 ha land is irrigated with alpine surface water in the upper plains supplied by Central Plains Water providing additional land surface recharge;
- 30,000 ha of groundwater irrigation to be replaced as part of the 60,000 ha of Central Plains Water supplied land;
- Abstraction limited to an allocation volume that meets climate driven demand in 8.5 years out of 10. This means consent holders are rationalised to an annual volume that represents the 8.5 out of 10 year demand for their particular land use; and
- Ecological flows of as close to 90% natural 7DMALF as possible met in the lowland streams.

13.10 The modelled outcome from the above actions is an average ecological flow of 80% natural 7DMALF across the lowland streams. This is lower than the goal of 90% natural 7DMALF but remains broadly consistent with recommended ecological flows of 70 to 90% of natural 7DMALF depending on stream size, with smaller streams requiring a higher percentage than larger streams and rivers. It is important to note that the ecological flow outcome is only achieved with all the modelled components. If a component is removed or amended then this will alter the outcome.

13.11 Many submitters strongly oppose the provisions in Variation 1 that require allocation to take account of records of past water use and that it is based on fully meeting climate driven demand in 8.5 years out of 10 instead of 9 years out of 10.

13.12 It is considered unacceptable to simply increase the allocation limits to accommodate higher reliability as this will mean accepting lower stream flows. Therefore, if allocation is to meet demand in 9 out of 10 years something else has to give or change.

13.13 Reducing allocation to meet environmental outcomes whilst also maintaining reliability of supply for abstractors is challenging and requires a finely balanced decision. The submitters may want to expand on their requests for alternative approaches to the solution in more detail during the hearing.

Allocation Limits (Kaituna Groundwater Allocation Zone and Little Rakaia Combined Surface and Groundwater Allocation Zone)

13.14 The allocation limit for the proposed Kaituna Groundwater Allocation Zone is not exceeded. The limit is the current allocation plus a small volume to provide for additional abstraction.

This is proposed on the basis that groundwater resides in deep volcanic rocks, has a low connection to surface water and is hydraulically isolated from the gravel-dominated aquifer system underlying the majority of the Selwyn Te Waihora catchment.

13.15 The proposed allocation limit for the Little Rakaia Combined Surface and Groundwater Allocation Zone is capped at the current allocation (sum of annual volumes on groundwater and surface water resource consents in the zone excluding surface water takes from the Rakaia River) as the streams in this area are generally meeting their values in terms of flow, water quality and ecological health. The Little Rakaia Zone is therefore considered to be 'fully allocated'.

Definitions

13.16 The definition of Central Plains Water is:

> *Central Plains Water means the holder of resource consents CRC061973, CRC061972, CRC062685and, CRC021091 or any variation or replacement consent.*

13.17 Central Plains Water requests that the definition of the Scheme is amended to reflect that several consents have recently changed. The references to consents held by Central Plains Water needs to be expanded to make reference to other consents that may be obtained by Central Plains Water (e.g. Glenroy Community Irrigation Scheme) or clarify that the 'scheme' is not just limited to the existing consents as set out in the definition.

13.18 The submitter's proposed amendment is recommended to be accepted.

Recommendation R11.1A Central Plains Water

That the definition of Central Plains Water within Section 11.1A be amended as follows:

Central Plains Water means the holder of resource consents CRC061973, CRC061972, CRC062685, CRC137417 and, ~~CRC021091~~ CRC136234 (and any other resource consent held by the same entity that authorises the take of water from the Rakaia or Waimakariri Rivers)[157] *or any variation or replacement consent.*

Policy 11.4.20

13.19 Policy 11.4.20 reads:

> *11.4.20 Enable managed aquifer recharge and targeted stream augmentation to assist with improvements to lowland stream flows.*

[157] V1pLWRP-350 Central Plains Water

13.20 Policy 11.4.20 received 14 submissions and 15 further submissions. Most support the policy or support it in part.

13.21 The intent of this policy is to signal support for Managed Aquifer Recharge (MAR) and Targeted Stream Augmentation (TSA) which are two important parts of the solution for improving summer low flows in the Selwyn River/Waikirikiri and lowland spring-fed streams. All of the modelled scenarios show that ecological values in the lowland streams are highly unlikely to be met without the addition of alpine water and a reduction in groundwater abstraction from within the catchment.

13.22 Four submitters, T Robillard, Ellesmere Irrigation Society, Fish and Game and Christchurch City Council seek that Policy 11.4.20 is retained.

13.23 Te Taumutu Rūnanga seeks changes to the wording to avoid or mitigate effects on Ngāi Tahu cultural values.

13.24 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests changes to the policy wording as follows:

"Enable managed aquifer recharge and targeted stream augmentation ~~to assist with~~ for the benefit of and improvements to lowland stream flows where:

(a) Any effects on Ngāi Tahu values, including but not limited to the abundance of and quality of mahinga kai and the mixing of waters are considered appropriate by Ngāi Tahu

(b) There is no adverse effects upon availability and quality of drinking water supplies; and

(c) There is no reduction in amount of or quality of natural wetlands; and

(d) Any adverse impact upon fish migration; and

(e) There is no reduction in any areas of significant indigenous vegetation or biodiversity."

13.25 Four further submissions were received with Central Plains Water, Federated Farmers, Selwyn DC supporting the amendment in part and Fonterra in opposition to the above amendment.

13.26 The issues covered by the policy conditions proposed by Nga Rūnanga and Te Rūnanga o Ngāi Tahu would reasonably be expected to be addressed as part of any MAR or TSA scheme. As written, however, the proposed conditions are somewhat inflexible and may dissuade proponents from trialling MAR and TSA if is the process is too onerous. This is undesirable given the importance of MAR and TSA for improving the ecological and cultural heath of the lowland streams. Policy clause (a) is also inappropriate as it requires secondary approval from Ngāi Tahu for any MAR or TSA scheme, and hinders the role of the decision maker.

13.27 It is proposed that Policy 11.4.20 be amended to include the conditions proposed by Nga Rūnanga and Te Rūnanga o Ngāi Tahu but written to provide more flexibility for remedying and mitigating potential issues including offsetting potential losses in biodiversity where this may be appropriate.

13.28 J Miller considers that the policy should be amended to include protection from unwanted organisms. Y Thomas opposes the policy because of broader concerns about possible flooding especially in Hororata.

13.29 It is noted that the conditions and matters of discretion in Rule 11.5.40 provide the decision maker with the scope to address the range of concerns raised by Ngāi Tahu and other submitters. These include protection of drinking water, adverse effects of raised groundwater levels, adverse effects of cultural values and significant habitats of indigenous flora and fauna. It is also noted that whilst the purpose of MAR and TSA is to improve flows, the outcome sought by Nga Rūnanga and Te Rūnanga o Ngāi Tahu is improved ecological and cultural health of waterways and it is considered that Policy 11.4.20 could be amended to reflect this.

13.30 Synlait Farms and Synlait Milk support the use of MAR and TSA to improve water quality and quantity, but with sources other than alpine water. The submitters also consider that pLWRP rules on non-consumptive taking and use of water are too restrictive to enable all available options for MAR and TSA to be deployed.

13.31 Whilst alpine water is the most likely source for any MAR and TSA scheme (via the water race network or the Central Plains Water irrigation scheme) Policy 11.4.20 does not preclude the use of water sources from within the Selwyn Te Waihora catchment to augment lowland stream flows, for example from artesian groundwater. Rule 11.5.34 is intended to specifically provide for the take and use of surface or groundwater for augmenting stream flows, and so restrictions in region-wide rules on the non-consumptive taking and use of water should not impact on the implementation of MAR and TSA within the Selwyn Te Waihora catchment.

13.32 Dairy NZ and Fonterra do not propose specific changes to the policy wording but seek that Policy 11.4.20 is more specific about when and how restoration activities will be delivered and the development of a catchment strategy and development plan. Forest and Bird seeks greater clarity about how the policy will be enabled and the CRC's role.

13.33 Eight further submissions were received in response to the identical submissions from Dairy NZ and Fonterra, with Fish and Game, K O Farm, Central Plains Water, The Fertiliser Association of NZ and Horticulture NZ supporting the submissions in part.

13.34 The directive style of the pLWRP and Variation 1 make it inappropriate to be specific about organisational roles and the method of delivery of Policy 11.4.20 within the Variation itself. This sits better outside Variation 1, as a part of a co-ordinated programme of work to implement the recommendations in the ZIP Addendum. TSA is actively being trialled in a joint project between CRC, Selwyn DC, Central Plains Water and landowners.

13.35 J Townsend considers that more water should be able to be taken (for irrigation) if low flow outcomes in the streams are met.

13.36 Under the Variation, taking and using surface and groundwater water is allowed when allocation is less than the proposed allocation limits which are set at a level to achieve the flow outcomes the submitter refers to.

Recommendation R11.4.20

That Policy 11.4.20 be amended as follows:

11.4.20 Enable managed aquifer recharge and targeted stream augmentation to assist with improvements to lowland stream flows <u>and their ecological and cultural health where:</u>

(a) <u>Adverse effects on cultural values, including those associated with unnatural mixing of water are satisfactorily avoided, remedied or mitigated; and</u>[158]
(b) <u>Adverse effects on the availability and quality of community drinking water supplies are avoided; and</u>
(c) <u>Adverse effects on fish passage are avoided, remedied or mitigated; and</u>
(d) <u>Inundation of existing wetlands is avoided, remedied or mitigated through the scheme design, construction and operation; and</u>
(e) <u>There is no net loss of significant indigenous vegetation or significant habitat of indigenous biodiversity; and</u> [159]
(f) <u>Adverse effects on people and property from raised groundwater levels and higher flows are avoided, remedied or mitigated</u>[160].

Policy 11.4.21

13.37 Policy 11.4.21 reads:

11.4.21 Manage groundwater and surface water together as a single resource, to ensure, in combination with the introduction of alpine water into the catchment, flows in the Waikirikiri/Selwyn River and lowland streams are improved and the allocation limits in Table 11(e) are met.

13.38 Policy 11.4.21 received 16 submissions and 36 further submissions.

13.39 Policy 11.4.21 marks a significant change in approach to the management of surface water and groundwater in the major part of the Selwyn Te Waihora catchment. Rather than manage and allocate surface and groundwater as separate entities, as has been the case to date, this policy directs that they are to be managed and allocated as a single 'combined resource' to reflect the strong connections between them.

[158] V1pLWRP-290 Te Taumutu Rūnanga
[159] V1pLWRP-399 Nga Rūnanga and Te Rūnanga O Ngāi Tahu
[160] V1pLWRP-13 Ms Yvonne Thomas

13.40 The second part of Policy 11.4.21 is to ensure that the introduction of alpine water into the catchment, through the Central Plains Water Irrigation Scheme, contributes to an improvement in flows in the Selwyn River and lowland streams.

13.41 Five submitters (NZ King Salmon, Te Taumutu Rūnanga, Central Plains Water, Fish and Game, and Forest and Bird) request that the policy is retained as written. Two submitters (Bowden Environmental and Y Thomas) request that the policy is deleted and nine submitters seek various amendments to the wording of the policy.

13.42 Eight further submissions were received from Horticulture NZ, TrustPower, Federated Farmers, Central Plains Water and Ellesmere Irrigation Society in opposition to Fish and Game's and Forest and Bird's submissions to retain Policy 11.4.21.

13.43 The Director General of Conservation seeks that policy wording is amended to include *"allocation limits <u>and targets</u> in Table 11(e)…"* because the NPSFM Policy B6 requires targets to be set to phase out over-allocation within a defined timeframe.

13.44 Four further submissions were received from Horticulture NZ, TrustPower, Federated Farmers and Central Plains Water in opposition to the above amendment.

13.45 This amendment is proposed to be accepted and is consistent with the NPSFM definitions of a limit and target (a type of limit where a resource is over-allocated). Table 11(e) contains an allocation "limit" for the Little Rakaia Zone which is fully allocated and meeting its freshwater objectives, and "targets" for the Rakaia-Selwyn and Selwyn-Waimakariri zones which are "over-allocated". It is difficult to be precise about when the "targets" will be met as this depends on several factors including the development of Central Plains Water and the replacement of 30,000 ha of land irrigated through groundwater abstraction with surface water irrigation. In addition approximately 80 percent of water takes do not expire until 2030-39.

13.46 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks the deletion of Policies 11.4.21 to 11.4.32 and replacement with a new suite of policies. Though not explicitly stated, three policies appear to be replacements for Policy 11.4.21.

<u>1. The catchments surface water and groundwater resource are managed as a single resource to ensure that the overall ground water levels and pressures are maintained or improved and the flows within the catchments surface water resources are improved.</u>

<u>2. The overall volume of water which can be allocated within the catchment is limited to that contained within Tables 11 (d), 11(e), 11(f) and 11(g).</u>

<u>3. Prohibit the allocation of surface or groundwater which may either singularly or cumulatively result in either the catchment wide or surface and groundwater specific allocations as set out within Tables 11 (d), 11(e), 11(f) and 11(g) being exceeded.</u>

13.47 Four further submissions were received from Horticulture NZ, Federated Farmers, Fonterra and Ellesmere Irrigation Society largely in opposition to Nga Rūnanga and Te Rūnanga o Ngāi Tahu's replacement policies.

13.48 Nga Rūnanga and Te Rūnanga o Ngāi Tahu's proposed Policy 3 is supported as it would make absolutely clear that there is to be no further allocation of surface and/or groundwater where a limit is or would be exceeded. This is consistent with the definition of a limit under the NPSFM, the "maximum amount of resources use available", and also supports the requirement to reduce existing over-allocation and prevent further over-allocation where it exists. This task would be made more difficult if compliance with the limits were to have a degree of "flexibility" as was the case under the under the NRRP where taking water in excess of a limit was a non-complying activity.

13.49 One submitter opposes the policy on the basis that more large scale irrigation could increase flooding especially in Hororata. Another submitter requests that the policy is amended so as not to allow an additional 30,000 ha of irrigation or allow farms to increase their environmental footprint.

13.50 Implementation of the Central Plains Water Irrigation Scheme and managed aquifer recharge will mean an increase in high groundwater levels. Hororata is in the area of potentially largest increase but this is based on regional scale predictions. In reality the local conditions and scheme construction and operation will dictate the extent of any groundwater mounding (See Appendix D for responses to issues raised in submissions).

13.51 The Central Plains Water Irrigation Scheme is legally consented and entitled to irrigate 60,000 ha of land. With regard to flooding, some protection is provided through the conditions on the Scheme's resource consent to use water. Conditions require it to produce a Ground and Surface Water Plan that includes a monitoring and reporting programme and describe how adverse effects on groundwater and surface water and drainage will be avoided. Importantly, as required by a condition of the resource consent, a Groundwater and Surface Water Expert Review Panel (GSWERP) is required to be established to review the Ground and Surface Water Plan, make recommendations and advise on how to address problems.

13.52 Ellesmere Irrigation Society and Bowden Environmental oppose the management of groundwater and surface water together as a single resource and the combined allocation limits. The submitters contend that this does not reflect proper management of the two resources. Bowden Environmental states that groundwater must be managed via a dynamic water level regime similar to rivers. Both submitters request that the policy is amended such that when a generalised annual groundwater allocation limit is exceeded, detailed groundwater investigations are required to support further allocation.

13.53 Ellesmere Irrigation Society requests that Policy 11.4.21 is amended to read:
"Manage groundwater and surface water ~~together as a single resource~~, to ensure, in combination with…"

13.54 The proposal that surface and groundwater continue to be managed as separate resources is not supported. Management and allocation of groundwater and surface water as distinct entities does not recognise their connectedness in the Selwyn Te Waihora catchment. Whilst the pLWRP partly recognises the connection by managing localised short-term impacts of hydraulically connected groundwater takes on flows in the lowland streams, these and surface water takes are not the major influence on low stream flows in this catchment. The surface water abstraction provides for less than 5% of the irrigated area and accounts for approximately 5% of the allocated volume. It is the cumulative effect of all abstractions spread throughout the catchment that has the biggest impact on stream flows. Allocating surface and groundwater as a combined resource is a simple approach that also recognises the strong interactions between the two. It avoids the need to set separate surface water allocation limits for approximately 40 individual streams and drains (to little beneficial effect) and provides the opportunity for beneficial policy interventions, in particular enabling surface water takes in the lower catchment to switch their allocation to deep groundwater so reducing localised impacts on stream flows.

13.55 A dynamic (adaptive) water allocation regime based on groundwater levels may be an efficient way of allocating water in the long-term. Earlier proposals for an adaptive groundwater management regime were assessed and it was concluded the technical, operational and consenting requirements would make implementation very difficult at this point in time[161]. Importantly, the addition of alpine water into the catchment plus Plan provisions to restore a healthy water balance also reduces the need for an adaptive groundwater management regime.

13.56 TrustPower requests that the policy is amended to constrain the management of groundwater and surface water as a single resource to *"within the Selwyn Waihora catchment"* and not the Little Rakaia Combined Surface and Groundwater Allocation Zone (which extends to the south bank of the Rakaia River). TrustPower contends that the proposed Little Rakaia Zone has the effect of establishing limits and rules for water takes from the Rakaia River which conflicts with the Rakaia River Water Conservation Order (WCO). TrustPower also considers that groundwater with a high degree of hydraulic connection to the Rakaia River should be managed through Section 12 (Central Canterbury Alpine Rivers) of the pLWRP and the flow and allocation regime managed by the Rakaia River WCO.

13.57 The southern boundary of the Little Rakaia Combined Surface and Groundwater Allocation Zone aligns with the boundary of the existing Rakaia Selwyn Groundwater Allocation Zone (which it is intended to replace) and adjoins the Chertsey Groundwater Allocation Zone to the south. It is proposed that the boundary on the south bank of the Rakaia River be retained as notified so that groundwater takes on Rakaia Island and Fereday Island are subject to the allocation limit for the Little Rakaia Combined Surface and Groundwater

[161] Technical Memorandum: Adaptive Management (updated version) prepared by Elemental Geoconsulting for Kathleen Crisley dated 14 June 2013.

Allocation Zone. If the boundary of the Little Rakaia Zone is moved to align with the north bank of the Rakaia River (the boundary of the Selwyn Te Waihora catchment) there would be a 'gap' and groundwater abstractions on Rakaia Island and Fereday Island would not be subject to any allocation limit. Under the pLWRP rules groundwater takes that do not fall with a Groundwater Allocation Zone would become a non-complying activity under Rule 5.129.

13.58 The 'note' above Rule 11.5.32 seeks to make clear that surface water takes from the Rakaia River and hydraulically connected groundwater takes are to comply with the Rakaia River WCO. It is accepted that a note in a plan has no legal effect therefore it is proposed that Rule 11.5.32 be amended to include a condition that the take does not conflict with the Rakaia River WCO and amend Rule 11.5.36 such that if this condition is not met the activity becomes prohibited.

Recommendation R11.4.21

That Policy 11.4.21 is amended as follows:

11.4.21 Manage groundwater and surface water together as a single resource, to ensure, in combination with the introduction of alpine water into the catchment, flows in the Waikirikiri/Selwyn River and lowland streams are improved and the allocation limits and targets[162] *in Table 11(e) are met.*

Recommendation R11.4.21A

Insert a new Policy 11.4.21A that reads:

11.4.21A. Prohibit the allocation of surface or groundwater which may either singularly or cumulatively result in the allocation limits within Tables 11(e), 11(f) and 11(g) being exceeded.[163]

Policies 11.4.23, 11.4.26 and Schedule 10

13.59 Policy 11.4.23 reads:

11.4.23 Only re-allocate water to existing resource consent holders at a rate and volume that reflects demonstrated use.

13.60 Policy 11.4.26 reads:

11.4.26 Where a consent applicant holds shares in an irrigation scheme, limit any additional consented volumes to the volume required to meet demand conditions in eight and a half years out of ten for a system with an application efficiency of 80%.

[162] V1pLWRP-211 Director General of Conservation
[163] V1pLWRP-404 Ngā Rūnanga and Te Rūnanga O Ngāi Tahu

13.61 The amendment to Schedule 10 and reads:

Schedule 10 - Reasonable Use Test

Within the Selwyn Waihora catchment method 1 shall determine seasonal irrigation demand based on eight and a half years out of ten.

13.62 Policies 11.4.23, 11.4.26 and amended Method 1 Schedule 10 are intended to reduce over-allocation of water (on paper) as required by Policy B6 of the NPSFM. Several studies and recent water use information indicate that whilst some consent holders use close to their full allocated volume others use significantly less with average use being in the order of 40 to 60%[164]. Policy 11.4.23 and Policy 11.4.26 links to Rules 11.5.32 and 11.5.33 that require allocation of water to be determined using a modified Method 1 in Schedule 10 in which the annual volume allocation is based on records of actual use moderated to meet demand conditions in 8.5 years out of 10 for an irrigation system with an application efficiency of 80%.

13.63 It is important to note that application of Method 1 and adjustment to the annual volume is one component of the integrated package for meeting water quantity outcomes described in the introduction to this section. It represents a sustainable balance recommended by the Zone Committee between the ecological flows achieved in the lowland streams and providing reliability for irrigation in the driest years. The background to this recommendation is described in an Environment Canterbury Memorandum[165].

13.64 The combined surface and groundwater allocation limits proposed in Variation 1 are modelled to protect ecological values in the lowland streams. However, current allocation does not fit within the proposed limits for the catchment. The following components are therefore designed to collectively meet the allocation limit:

- Targeted Stream Augmentation (TSA) of 900 L/s in summer and 200 L/s in winter to soak holes above the lowland streams in the Rakaia-Selwyn Combined Surface and Groundwater Allocation Zone;
- Managed Aquifer Recharge (MAR) $2m^3/s$ supplied to the groundwater across the top of the upper plains area in winter;
- 60,000 ha land irrigated with alpine surface water in the upper plains supplied by Central Plains Water;
- 30,000 ha of groundwater irrigation to be replaced as part of the 60,000 ha of Central Plains Water supplied land;
- Allocation limit sufficient that demand is met in 8.5 out of 10 years; and

[164] Canterbury Region Water Use Reports for the 2010/11, 2011/12 and 2012/13 Water Years (Environment Canterbury Reports R012/19, R012/105 and R14/4); Memorandum on review of water use reports for the Canterbury Region (Williams H R 2011); and Modelling of stream discharge and groundwater levels in the Te Waihora / Lake Ellesmere catchment (Williams H R 2011).

[165] Memorandum from Dan Clark to Alastair Picken and Tami Woods 31 January 2014. Updated Allocation Methodology for the Selwyn Waihora Catchment

- Ecological flows of as close to 90% natural 7DMALF as possible met in the lowland streams.

13.65 The outcome expected from meeting limit through the above actions is an average ecological flow of 80% natural 7DMALF (80% of the flow that would occur in the absence of abstractions) across the lowland streams. Though less than the original goal of 90% natural 7DMALF, the outcome is still broadly consistent with recommended ecological flows of 70 to 90% of natural 7DMALF depending on stream size[166].

13.66 Not linking allocation to Method 1 in Schedule 10 and providing an allocation to meet demand in 9 out of 10 years (as requested by many submitters) means that something else has to give in order to meet the ecological flow outcome of 80% natural 7DMALF. Simply increasing the allocation limit to accommodate a higher annual volume is not considered acceptable as this would mean accepting a further "relaxation" on flow and ecological outcomes.

Policy 11.4.23

13.67 Policy 11.4.23 received 28 submissions and 39 further submissions. There is strong opposition to this policy.

13.68 Three submitters request that the policy to be retained (Director General of Conservation, Fish and Game and Forest and Bird). Fourteen submitters request that the policy is deleted and 11 request amendments.

13.69 Several submitters argue that water rights should not be withdrawn or adjusted down just because they have not been used. Many submitters, including Irrigation NZ, Synlait Farms, and Central Plains Water consider this policy goes against good irrigation practice and does not account for rotational cropping systems and New Zealand's irregular cyclical climatic variation. Further, the submitters allege that it would encourage perverse behaviour with consent holders using as much of their allocation as possible – a 'use it or lose it' response.

13.70 Two submitters seek the deletion of Policy 11.4.23, and as an alternative suggest setting a start date for the policy at a reasonable time after accurate water metering data has been obtained for all water takes.

13.71 One submitter considers that the policy will penalise users who have made efforts to reduce their water use through methods such as water scheduling, conservation tillage, more shelter, and more efficient application.

[166] Te Waihora/Lake Ellesmere catchment flow review: ecological values and flow recommendations at minimum flow sites (Golder Associates 2012); and Te Waihora/Lake Ellesmere catchment flow review: ecological values and flow requirements (Golder Associates 2011).

13.72 Many submitters consider that reducing present allocation to reflect previous use would unfairly restrict operations and options and plans for future development with cropping, horticulture, milk processing and mussel processing cited as examples.

13.73 Many submitters, including Irrigation NZ, Bowden Environmental, Ellesmere Irrigation Society Inc, request that "demonstrated use" is not used as a re-allocation mechanism and is replaced with the term "reasonable use" which is defined and reflects water requirements to meet demand in a dry season. Several submitters state that recent usage is not a good indicator of the need to have a reserve for drought years as this may not be not evident from short-term usage analysis.

13.74 Irrigation NZ requests that the policy is amended to read *"…reasonable use based on a nine in ten year reliability and 80% application efficiency*".

13.75 Four further submissions were received from Horticulture NZ, The Crossing, ANZCO & CMP and Central Plains Water largely in support of the above amendment.

13.76 T Robillard requests that water continue to be reallocated on the basis of soil water holding capacity and rainfall.

13.77 Central Plains Water and Dairy Holdings request that Policy 11.4.23 not apply to irrigation schemes which have development timeframes that are staged and extend over a number of years. This means that Central Plains Water may not take their full consented rate of take for a number of years, possibly beyond the life of their existing consent. It is requested that the policy wording is amended to:

> *"Except in the case of an Irrigation Scheme, only reallocate water to existing resource consent holders at a rate and volume that reflects demonstrated use'. [OR]*
> *Only reallocate water to existing resource consent holders at a rate and volume that reflects the greater of:*
> *(a) demonstrated use; or*
> *(b) in the case of an Irrigation Scheme, the volume of water required to supply the Irrigation Scheme when fully developed."*

13.78 Federated Farmers requests that Policy 11.4.23 is deleted. An alternative policy is proposed for reducing the potential volume of water abstracted from the catchment while still leaving water permit holders access to sufficient allocation in dry years. The submitter requests that all water permit holders have an annual volume condition based on reasonable use calculated in accordance with Schedule 10. The annual volume is divided into two blocks: Block A which is the quantum of water likely to be used in an average rainfall year; and Block B being the additional water required to ensure reliability in 9 years out of 10. The Block B is not able to be transferred to any other site and is only available for abstraction in 'dry year' conditions.

13.79 Fonterra is broadly supportive of the concept of "demonstrated use" but requests that the term is given greater clarity by explicitly stating that the return periods for dry conditions are taken into account.

13.80 Fonterra requests that Policy 11.4.23 does not apply to industrial or trade processes as planned development of its Darfield milk processing site is yet to be fully realised. A portion of the consented water take remains unused and may still be unused when the consent requires replacement under Variation 1. If the volume re-allocated is based on "demonstrated use" this will prevent further planned development of the site. ANZCO & CMP also request a similar exemption for industrial and trade processes along the following lines:

> *"Only reallocate water to existing resource consent holders at a rate and volume that reflects demonstrated use, unless the resource consent holder is operating an existing industrial or trade process and demonstrates that the unused portion of the take is necessary to allow for planned future development at the industrial or trade process site."*

13.81 Four further submissions were received on Fonterra's submission with from Horticulture NZ and ANZCO & CMP in support and Federated Farmers and Forest and Bird in opposition.

13.82 Synlait Farms and Synlait Milk consider Policy 11.4.23 flawed and request that allocation allows for future growth of an activity, based on realistic expectations, technical efficiency and reliability. The submitters seek that only volume is reduced not the rate of take. The submitters highlight concern over renewal of water consents for those with Central Plains Water shares because taking part of their allocation as surface water from Central Plains Water and topping up reliability with groundwater will show less demonstrated use.

13.83 Fonterra seeks that the relationship between Policy 11.4.23 and Policy 4.50 in the pLWRP (which requires that in over-allocated catchments that replacement water permits can only be granted for no more than 90% of the previously consented rate of take and annual volume} is made clear by way of an "Advisory Note" as follows:

> *"For the purpose of Policy 4.50(b)(i) of this Plan, policy 11.4.23 and associated rules constitutes a method and defined timeframe to phase out over allocation. For the avoidance of doubt, that means the requirement of Policy 4.50(b)(i) for replacement takes to be no more than 90% of the previously consented take does not apply in the Selwyn Waihora catchment and is replaced instead by Policy 11.4.23."*

13.84 Nga Rūnanga and Te Rūnanga o Ngāi Tahu propose a suite of replacement policies. Policy 13 below sets out an approach for determining reasonable use that differentiates between irrigation scheme shareholders and those who are not, and provides a choice of three options for determining reasonable use. However, the submitter provides no reasons for the amendments.

> *"13. To determine the reasonable use the following shall be applied:*
>
> *(a) For water permit holders who also hold shares in an irrigation scheme an annual volume from all sources of irrigation water shall be either:*

(i) That required to meet demand conditions in 8.5 years out of 10 using an application efficiency of 80% or

(ii) The demonstrated the rate and volume of use; or

(iii) That based upon the implementation of the most efficient and effective irrigation practices for a soil type.

(b) For water permit holders who do not hold shares in an irrigation scheme an annual volume shall be either:

(i) That contained within Schedule 10 of the pLWRP; or

(ii) The demonstrated the rate and volume of use; or

(iii) That based upon the implementation of the most efficient and effective irrigation practices for a soil type."

13.85 Four further submissions were received from Federated Farmers, Fonterra and Ellesmere Irrigation Society and ANZCO & CMP in opposition to Nga Rūnanga and Te Rūnanga o Ngāi Tahu's proposal to replace all policies.

Policy 11.4.26

13.86 Policy 11.4.26 received 16 submissions and 22 further submissions.

13.87 Two submitters (Fish and Game and Forest and Bird) request that the policy be retained, three submitters request the policy be deleted and 11 request various amendments.

13.88 Central Plains Water, Federated Farmers, Irrigation NZ, Synlait Farms, Synlait Milk, Southbank Dairies, Erralyn Farm and Krysette Ltd, Horticulture NZ, the Canterbury Farming Company and The Crossing all request that Policy 11.4.26 is amended to provide for 9 in 10 year reliability. M Bruce seeks 10 out of 10 years reliability. One submitter seeks that seasonal irrigation demand is based on that required to farm efficiently and justified by soil type and soil moisture conditions.

13.89 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests Policies 11.4.21 to 11.4.23 are replaced with their own Policies 1 to 13. It is assumed that Policy 13(a) most closely aligns with Policy 11.4.26. This is as follows:

13. To determine the reasonable use the following shall be applied:

(a) For water permit holders who also hold shares in an irrigation scheme an annual volume from all sources of irrigation water shall be either:

(i) That required to meet demand conditions in 8.5 years out of 10 using an application efficiency of 80% or

(ii) The demonstrated the rate and volume of use; or

(iii) That based upon the implementation of the most efficient and effective irrigation practices for a soil type.

13.90 The submitter's reasons for requiring a reasonable use volume for irrigation scheme shareholders that is different to non-scheme shareholders is not explained.

Analysis

13.91 There is tension between providing water for farming, industry and future development and improving the flows and improving the health of the lowland streams. Current low flows in the streams in summer are not considered acceptable. For streams to spend less time at low flows than is currently the case there must be a reduction in the volume of water abstracted from within the catchment and additional water brought into the catchment to replace existing groundwater sourced irrigation and for groundwater recharge.

13.92 Securing the replacement of groundwater irrigation with surface water irrigation through Central Plains Water is critical for reducing the level of over-allocation by not re-allocating a proportion of groundwater when consents expire. It is vital that users supplied by Central Plains Water do not simply receive their previous groundwater allocations.

13.93 Central Plains Water and Dairy Holdings seek that irrigation schemes with long development timeframes are exempt from this Policy 11.4.23.

13.94 This amendment is not considered necessary since the geographical scope of the Variation does not include surface water takes from the alpine (Rakaia and Waimakariri) rivers which are the sources for Central Plains Water.

13.95 Fonterra, Synlait, ANZCO & CMP request an exemption for industrial and trade abstractions. It is agreed that Policy 11.4.23 should not apply to industrial and trade activities where a resource consent to take water is in place and where this provides for planned future development as for Fonterra's Darfield site.

13.96 However, the amendment is not necessary if Policy 11.4.23 is amended (as recommended below) to refer to Schedule 10 (Reasonable Use Test). This is because the Schedule 10 does not apply to industrial or trade abstractions and explicitly states *"This Schedule only applies to the activity of using water for irrigation purposes…"*

13.97 Implementing Policy 11.4.23 will not reduce the volume of water physically abstracted from the catchment. However, it will direct a reduction in allocation on paper and promote the return of water that is unused to the environment. This will manage the risk that 'surplus' water is transferred leading to an increase in abstraction. It is acknowledged that for users who are not members of the Central Plains Water Irrigation Scheme this may constrain development plans if users were expecting to receive the same annual volume when their existing consent is replaced.

13.98 Some submitters express concern about re-allocation based on 'demonstrated use' and note this goes against good irrigation practice and may lead to a "use it or lose it" mentality. Whilst a risk, there are checks and balances in place including the requirement for 80% application efficiency and compliance with the Farming Practices in Schedule 24 and Farm

Environment Plans in Schedule 7 which cover irrigation management practice and require record keeping.

13.99 However, as noted by many submitters, allocation based only on 'demonstrated use' is not sound. It is therefore recommended that the term be replaced with 'reasonable use' and that Policy 11.4.23 is specifically tied to Schedule 10 (Reasonable Use Test). It is however, an essential part of the solution for addressing over allocation that annual volumes are based on Method 1 in Schedule 10 which takes account of records of past use, though moderated to meet demand conditions in dry years.

13.100 It is important to note that the volume of water allocated to date for irrigation has generally been based on a formulaic basis intended to satisfy the user's water requirements and has commonly been based on pasture which may over-estimate demand. The intent of Policy 11.4.23 is that records of actual use allow these requirements to be more accurately determined for a particular farming activity and land use and to reduce allocation where users have demonstrably been allocated more water than they need.

13.101 Policy 11.4.26 is intended to ensure that where a person holds shares in Central Plains Water any re-allocation of groundwater is limited to that needed to make-up the shortfall in reliability of supply (if any) by the scheme, and that the quantum would be calculated to meet demand in 8.5 out of 10 years for an irrigation system with an application efficiency of 80%.

13.102 However, it is recommended that Policies 11.4.23 and 11.4.26 be combined into one policy as the method of calculating annual volumes is the same for both Central Plains Shareholders and users who are not members of the irrigation scheme, that is, Method 1 Schedule 10 which takes into account records of past use.

13.103 The amendment is based on part acceptance of the Federated Farmers submission that allocation be based on reasonable use in accordance with Schedule 10, and part acceptance of other submissions that seek 'demonstrated use' be replaced with the term 'reasonable use' (albeit opposed to reasonable use being constrained to the application of Method 1).

13.104 P & A Jarman request the same provisions apply to all consent holders, which also provides a basis for combining policies 11.4.23 and 11.4.26.

Method 1 Schedule 10

13.105 The proposed amendment to Method 1 received eight submissions all in opposition and 10 further submissions.

13.106 Most submitters refer to submission points made under Policies 11.4.23 and 11.4.26. All submitters seek deletion of the proposed change to Method 1 and that consented volumes should remain at the 9 in 10 year level or more. One submitter requests that the test for water use is a 200 year drought.

13.107 Irrigation NZ states that the difference in volume between eight and a half and nine years is insignificant when put in the context of resulting environment gains and the uncertainty that surrounds the modelling.

13.108 The rationale in applying Method 1 is that annual volumes would be based on records of water use now that measurement of water takes is legally required[167], and the volume moderated for dry years and irrigation efficiency. Studies and initial water use information suggest that on average between 40 to 60% of allocated volume is used therefore it is assumed that some users have more water than they require and that this 'surplus' would be 'clawed back' and not be re-allocated on application to replace existing consents.

13.109 As described earlier, it is important to emphasise that the application of Method 1 and adjustment to the level of reliability to meet demand in 8.5 years out of 10 is one component of an integrated solution to reduce allocation down to the proposed limits in these situations where zones are over-allocated and thus meet the ecological flow outcomes for the lowland streams.

13.110 It is considered that there is good justification for requiring the application of Method 1 and relating allocation to records of water use in this catchment, which for the most part is significantly over-allocated.

13.111 The first reason is the need to manage the transfer of surplus water which would lead to increased abstraction. It is helpful to distinguish between "wet water" (allocated water that is used) and "dry water" (allocated water that is not used). When "dry water" is converted to "wet water" (e.g. by increasing the irrigated area) abstractive stress is increased.

13.112 The second reason is to reduce over-allocation as required by the NPSFM. If an individual's water allocation exceeds actual requirements then redefining allocation in line with Method 1 (when consents are renewed) will reduce the overall allocation for the zone even though it will make no difference to the abstractive stress on the resource.

13.113 If any component of the integrated solution is removed or amended in isolation this would alter the ecological flow outcome. It is not considered appropriate to increase the allocation limits to accommodate higher reliability as this would mean accepting lower stream flows. If Method 1 was retained such that demand is met in 9 out of 10 years this would mean some other component of the integrated solution would need to change.

13.114 To achieve a reduction in allocation to meet environmental outcomes whilst maintaining acceptable reliability for abstractors requires a finely balanced decision. Submitters may wish to expand on their evidence for alternative approaches in more detail during the hearing.

[167] Resource Management (Measurement and Reporting of Water Takes) Regulations 2010

13.115 It is noted that an alternative approach to meeting the limits for the Rakaia-Selwyn and Selwyn-Waimakairiri Combined Surface and Groundwater Allocation Zone could be a pro-rata reduction in allocation when consents are renewed in accordance with Regional Policy 4.50 in which consent holders receive no more that 90% of their previous consented annual volume if the zone is over-allocated.

Recommendation R11.4.23

That Policy 11.4.23 be amended as follows:

Only reallocate water to existing resource consent holders at a rate and volume that reflects ~~demonstrated~~[168] reasonable use as calculated in accordance with Schedule 10[169] to provide a volume required to meet demand conditions in eight and a half out of ten years for a system with an application efficiency of 80%[170].

Recommendation R11.4.26

That Policy 11.4.26 be deleted.

~~*Where a consent applicant holds shares in an irrigation scheme, limit any additional consented volumes to the volume required to meet demand conditions in eight and a half years out of ten for a system with an application efficiency of 80%.*~~[171]

Recommendation R Schedule 10 – Reasonable Need

That the proposed amendment to Method 1 be retained.

Policy 11.4.27

13.116 Policy 11.4.27 reads:

11.4.27 Apply adaptive management conditions to groundwater resource consents that have previously been subject to adaptive management conditions.

13.117 Policy 11.4.27 received nine submissions and three further submissions.

13.118 Following hearings in 2006 and 2007, 69 consent applications to take groundwater from the Rakaia Selwyn Groundwater Allocation Zone and 41 applications for the Selwyn Waimakariri Groundwater Allocation Zone were granted by independent hearing commissioners in

[168] V1pLWRP-1401 Erralyn Farm and Krysette Ltd
[169] V1pLWRP-868 Federated Farmers; V1pLWRP-1634 The Canterbury Farming Company; V1pLWRP-1065 Irrigation NZ; V1pLWRP-483 Ellesmere Irrigation Society; V1pLWRP-590 Bowden Environmental;
[170] Consequential amendment from combining Policy 11.4.23 with Policy 11.4.26
[171] V1pLWRP-336 P & A Jarman

2008[172]. CRC groundwater staff had recommended that the applications be declined because groundwater zones were fully allocated.

13.119 In recognition of the over-allocated nature of these zones, the consents were issued with complex Adaptive Management Conditions and for a duration of ten years after implementation, or 1 May 2020, whichever is earlier.

13.120 Policy 11.4.27 is included in the Variation after an evaluation of three options; (1) not to renew these consents; (2) to renew consents without adaptive management conditions; (3) to renew consents with adaptive management conditions.

13.121 Of the nine submissions on this policy, three submitters (Fish and Game, Forest and Bird, Malvern Hills Protection Society) request that the policy is retained without amendment. Two submitters (Synlait Farms and Synlait Milk) requests that the policy is deleted and four, including Nga Rūnanga and Te Rūnanga O Ngāi Tahu, request that the policy is amended.

13.122 Synlait Farms requests the policy is deleted on the basis that the consents with adaptive management conditions will be amongst the first to be renewed (being granted for only 10 years) and that Policies 11.4.23 and 11.4.26 will further reduce their reliability and the ability to exercise them. The submitter suggests that this policy is not required with a successful Central Plains Water scheme, Managed Aquifer Recharge and Targeted Stream Augmentation.

13.123 Both the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones are significantly over-allocated. Phasing out over-allocation is to be addressed through efficient use of water, a switch from groundwater to surface water irrigation within the Central Plains Water command area and management of transfers. This will take many years and extend well beyond the life of this Plan. The task would be made even more difficult if greater access to groundwater is provided to these consent holders.

13.124 Fonterra requests that the policy is amended such that these consents are renewed with adaptive management conditions *"on the same or similar terms as the pre-existing conditions where the proposed use of water remains the same"*.

13.125 These consents can be complex to understand and administer for the user and CRC, therefore enabling some degree of flexibility for the consent authority to adjust consent conditions is desirable.

13.126 Erralyn Farm and Krysette Ltd request that the policy is amended such that adaptive management conditions are only applied whilst the limits for the combined surface and groundwater allocation zones are exceeded.

[172] http://ecan.govt.nz/news-and-notices/notices/pages/hearing-decisions.aspx?year=2008

13.127 Existing allocation as a percentage of the proposed limits in the Rakaia-Selwyn and Selwyn-Waimakariri combined surface and groundwater allocation zones is estimated to be 127% and 164% respectively[173]. Phasing out the over-allocation is expected to take many years and extend beyond the life of this Plan. However, it is appropriate to make clear that adaptive management conditions apply whilst zones are fully or over-allocated.

Recommendation R11.4.27

That Policy 11.4.27 is amended as follows:

Until such time as the allocation limits in Tables 11(e) and 11(f) are no longer exceeded[174] apply adaptive management conditions ~~to~~ upon replacement of any[175] groundwater resource consents that have previously been subject to adaptive management conditions on the same or similar terms as the pre-existing conditions where the proposed use of water remains the same[176].

Policy 11.4.28

13.128 Policy 11.4.28 reads:

> *11.4.28 Protect the ecological and cultural health of the Waikirikiri/Selwyn River and lowland streams by including the minimum flows and partial restrictions in Tables 11(c) and 11(d) on new and replacement resource consents from 2025.*

13.129 Policy 11.4.28 received 15 submissions and 21 further submissions.

13.130 Of the 15 submissions on this policy, one submission requests the policy is retained, four request that the policy is deleted and 10 request that it is amended.

13.131 This policy gives effect to the Zone Committee's recommendations for minimum flows for rivers and streams in the catchment. Minimum flows are only set for rivers, streams and drains that have surface water takes or groundwater takes modelled as having a stream depletion effect.

13.132 The starting point is that minimum flows are set to provide protection for in-stream ecology with higher minimum flows adopted for streams with a high cultural significance. The policy seeks to take into account the views of consent holders through delaying introduction of revised minimum flows until 2025 when it is anticipated that stream flows will have increased from alpine water imported into the catchment via the Central Plains Water Irrigation Scheme and the retirement of (no longer required) groundwater consents currently used to irrigate 30,000 ha in the upper plains.

[173] Variation 1 Section 32 Evaluation Report (February 2014) p149
[174] V1pLWRP-1456 Erralyn Farm and Krysette Farm Ltd
[175] V1pLWRP-410 and V1pLWRP-401 Ngā Rūnanga and Te Rūnanga O Ngāi Tahu
[176] V1pLWRP-1259 Fonterra Co-operative Group Limited

13.133 The reason for not introducing higher minimum flows sooner is that to do so before over-allocation of groundwater is addressed would not significantly improve base flows and summer low flows. Surface water and stream depleting groundwater takes account for a small proportion of allocated water and many streams already spend much of the irrigation season below their current minimum flow. As a result only a small percentage of allocated surface water is abstracted.

13.134 Introducing higher minimum flows in 2025 gives abstractors that do have access to reliable surface water (notably the Halswell and LII rivers) time to adjust their farming systems and take advantage of Policy 11.4.30. This enables existing resource consent holders to take deeper groundwater where an existing consent to take surface water or stream depleting groundwater is surrendered.

13.135 Five submitters request that minimum flows are introduced sooner than 2025 and express concern about waiting to see the effects of imported alpine water. The Director General of Conservation requests that the policy is amended so that the minimum flows in Tables 11(c) and 11(d) have effect as soon as Variation 1 is operative.

13.136 Fish and Game is opposed to the exclusion of existing consent holders until the time of consent expiry and requests that the policy is amended to include new minimum flows on existing, new and replacement resources consents from 2025.

13.137 Four further submissions were received from Horticulture NZ, Federated Farmers, Fonterra and ANZCO & CMP in opposition to the above amendment from Fish and Game.

13.138 Te Taumutu Rūnanga requests that the minimum flows in Tables 11(c) and 11(d) come into effect for new consents when Variation 1 becomes operative then as existing consents are replaced.

13.139 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests that the minimum flows and partial restrictions are applied upon replacement of any surface or groundwater permit where there is a direct, high or moderate stream depletion effect, and on all permits by 2025.

13.140 The Malvern Hills Protection Society requests a higher minimum flow for the Selwyn River/Waikirikiri and that new takes are prohibited. Forest and Bird seeks that the limits in Tables 11(c) and 11(d) are reviewed after 5 years to check they are still appropriate.

13.141 Southbank Dairies request the policy is deleted and that a comprehensive study of groundwater and surface water interactions is completed before restricting groundwater takes. Bowden Environmental and Ellesmere Irrigation Society request that Policy 11.4.28 is deleted or amended to include reference to a revised single Table that contains a minimum flow, allocation restriction above the minimum flow and an allocation limit all with a metric in litres/second (these submitters are opposed to a combined surface and groundwater allocation as an annual volume).

13.142 Ellesmere Irrigation Society also requests that the policy wording is amended so that minimum flows are included on new and replacement resource consents from 2025 only where they have a proven direct or high stream depletion effect through actual aquifer testing undertaken by CRC. The submitter states that aquifer tests in the Ellesmere area have shown that only a small number of abstractions have a noticeable effect on streams.

13.143 Central Plains Water seeks more explicit recognition of the benefits derived from the scheme in terms of flows. However, the submitter also highlights that the relationship between scheme development and stream flows is uncertain and recommends that further work be undertaken following the development of Central Plains Water. In the interim it is suggested that Table 11(c) should be deleted or amended to include existing minimum flows.

13.144 Central Plains Water also seeks further amendments (unspecified) to Variation 1 to ensure there is no conflict between the outcomes anticipated and the submitter's consent compliance obligations, for example in respect of potential groundwater mounding.

13.145 Fonterra and Dairy NZ are concerned that expectations and assumptions in Variation 1 may not eventuate (including managed aquifer recharge, targeted stream augmentation, the reduction in groundwater abstraction and the timing of the Central Plains Water development). If this is the case, the submitters contend that minimum flows that will apply from 2025 will have a very significant effect on new and replacement takes occurring after 2025 (significantly reducing reliability).

13.146 Both submitters seek that the timing of the introduction of minimum flows is linked to specific actions and/or measured flow increases and not a specific date. It is requested that Tables 11(c) and 11(d) and 2025 implementation date are deleted and that Policy 11.4.28 is amended to read:

> *"…by including minimum flows and partial restrictions on new and replacement resource consents <u>that reflect increased flows associated with groundwater and surface water body augmentation and reduction in groundwater abstraction, once those increased flows are observed in those water bodies.</u>"*

13.147 One submitter opposes minimum flows on water take permits and highlights specific problems with their water take from Derrett Stream and flow recording on the Hororata River.

13.148 Introducing minimum flows from 2025 on consent renewal does mean that the majority of resource consents will not have revised minimum flows applied until 2030 to 2039, which is when most expire. The argument for deferring revised minimum flows until 2025 when the catchment water balance and flows are expected to have improved is still valid. However, introducing minimum flows on consent expiry does create an uneven playing field in that some abstractors will be subject to new minimum flows and others on current minimum flows depending on when consents expire. It is therefore proposed that Policy 11.4.28 is

amended so that revised minimum flows apply to all consents from 2025 and not specify 'on consent expiry'. This would leave open the option for the CRC to undertake a consent review in 2025 to implement revised minimum flows on existing as well as new consents if this is considered appropriate.

13.149 The NPSFM Policy B1 requires regional councils to set environmental flows for all bodies of freshwater by 2030. The majority of minimum flows in the Variation are in order of 70 to 90% of the natural 7DMALF which is the recommendation for protecting ecological values. One could argue that to achieve healthy lowland streams, minimum flows should be set at this level irrespective of plans to import alpine water to the catchment. This position is supported by CRPS Policy 7.3.4 (Water Quantity) which requires that environmental flow and allocation regimes are established to safeguard the life supporting capacity of water bodies (amongst other things) before providing for abstraction for uses such as irrigation. It is noted that there will be at least one statutory plan review cycle before 2025 which is an opportunity to amend specific minimum flows in light of improved flow data and information.

13.150 To allay the concerns that revised minimum flow regime will impact on reliability, Policy 11.4.30 provides the option for surface water and stream depleting groundwater takes to transfer to deeper groundwater that is not stream depleting and therefore not subject to minimum flow restrictions. 2025 is considered ample time to take advantage of this policy position.

13.151 Central Plains Water, Fonterra and Dairy NZ question whether the Central Plains Water scheme development, a reduction in groundwater abstraction, managed aquifer recharge and targeted stream augmentation and consequent flow benefits will eventuate. Though subject to uncertainty, and shareholder commitment, Central Plains Water estimates that the full scheme could be developed by September 2018[177]. Modelling shows that adding water to the catchment allows streams to spend less time below minimum flows and ecological flows[178]. It is noted that some improvements in flow can be expected a few years after each stage is completed, though the full benefits to lowland stream flows are not expected until after the full Central Plains Water scheme is constructed and 30,000 ha of land irrigated with groundwater transfers to a surface water source. The flow benefits should be fully realised by 2025 when the minimum flows come in.

13.152 The request from Ellesmere Irrigation Society that minimum flows only apply to consents where CRC has undertaken actual aquifer testing to prove a direct or high stream depletion effect is not supported. CRC's preferred approach is that aquifer testing is undertaken by the applicant to determine stream depletion. Where aquifer testing has not been undertaken CRC adopts a conservative modelling approach to ensure that any hydraulic connection is accounted for. This precautionary approach is considered appropriate (see response to the issue raised by the submitter in Appendix D).

[177] http://www.cpwl.co.nz/scheme-development/construction-stages
[178] Predicting the consequences of future scenarios: Surface water quantity. Report R14/8 (Clarke 2014)

Recommendation R11.4.28

That Policy 11.4.28 is amended to read:

Protect the ecological and cultural health of the Waikirikiri/Selwyn River and lowland streams by including the minimum flows and partial restrictions in Tables 11(c) and 11(d) on all ~~new and replacement~~[179] resource consents from 2025.

Policy 11.4.29

13.153 Policy 11.4.29 reads:

> *11.4.29 Where the minimum flow and restriction regime in Table 11(c) will result in a significant loss of reliability enable a staged increase in the minimum flow, but only in circumstances where a consent applicant can demonstrate that they have had a high reliability of surface water for irrigation and/or prior to 22 February 2014, significant investment in infrastructure to take water has been made.*

13.154 Policy 11.4.29 received 9 submissions and 11 further submissions.

13.155 Policy 11.4.29 is intended to cater for exceptional circumstances where an increase in minimum flow would significantly reduce reliability for surface water resource consent holders who have high reliability currently or have made significant investment in irrigation infrastructure. It was informed by discussion with consent holders and analysis of the economic impact of proposed minimum flows[180]. This policy would allow the minimum flow to be met in several stages. Economic analysis suggests this would most likely apply to large surface water takes for irrigation from the Halswell River and LII River which enjoy high reliability and but have very low minimum flows currently (typically less than 50% 7DMALF[181]).

13.156 Of the nine submissions received on Policy 11.4.29, two submitters (NZ King Salmon and Forest and Bird) request that the policy be retained, six submitters request the policy be deleted or amended.

13.157 NZ King Salmon supports Policy 11.4.29 as it provides flexibility for current abstractors to transition their operations to meet the minimum flow and restriction regime over time where there is a demonstrated significant loss of reliability.

13.158 Horticulture NZ requests that any assessment under Policy 11.4.29 considers all relevant values and objectives and seeks clarity as to how that assessment would be made. Ellesmere Irrigation Society considers that Policy 11.4.29 needs to be made clearer as it can be

[179] V1pLWRP-690 Fish and Game Council North Canterbury

[180] Selwyn Waihora Streams Economic Impact of Minimum Flow Proposals Report R13/115 (Harris Consulting, 2013)

[181] Ecological Values and Flow Recommendations at Minimum Flow Sites Report R12/123 (Golders 2012)

interpreted in several ways for example allowing irrigation to occur in a staged manner when a stream has fallen below its minimum flow level (within an irrigation season) or a stepped increase over several years until the minimum flow in Table 11(c) is reached. One submitter opposes policies that impose minimum flow regimes on water take permits. This is linked to issues with their current consent and flow recording on the Hororata River.

13.159 The Director General of Conservation considers that allowing exceptions to compliance with the minimum flow and restriction regime under Policy 11.4.28 to be unacceptable, particularly as Policy 11.4.30 provides a pathway for existing consent holders to transfer their surface water takes to a deep groundwater source.

13.160 Te Taumutu Rūnanga and Fish and Game oppose the policy and express similar concerns. Water permit holders already receive significant concessions on delayed minimum flow restrictions in Table 11(c) which do not apply until 2025 for new consents, and only applying to existing consents or water permits when they expire. The submitters consider that 2025 is a very reasonable timeframe to adjust water use practices and that any further concessions will significantly delay and jeopardise meeting the intended outcomes and limits in Variation 1.

13.161 Nga Rūnanga and Te Rūnanga o Ngāi Tahu do not specifically state its position on Policy 11.4.29 and no similar policy appears in the suite of policies proposed by the submitter to replace Policies 11.4.21 to 11.4.32 in Variation 1.

13.162 It is a relatively finely balanced decision whether Policy 11.4.29 is required at all, especially as 2025 provides 10 years for resource consent holders to adjust operations to meet the revised minimum flow or take advantage of Policy 11.4.30 which allows consent holders to move their surface water takes to a groundwater source that is not stream depleting. Furthermore, low flows are expected to have improved by 2025 as a result of the Central Plains Water development and the policy would be expected to apply in very few cases.

13.163 Retaining Policy 11.4.29 would also require a more lenient rule framework such that not meeting the minimum flow would become a non-complying activity status. This creates a risk that applicants may seek to revisit the minimum flow itself (not just the date from when it is to apply). This would be inconsistent with the activity status of the regional rules (Rules 5.123 and 5.125) whereby exceedance of an environmental flow and allocation limit is a prohibited activity.

13.164 On balance it is recommended that Policy 11.4.29 be deleted.

Recommendation R11.4.29

That Policy 11.4.29 is deleted:

~~*Where the minimum flow and restriction regime in Table 11(c) will result in a significant loss of reliability, enable a staged increase in the minimum flow, but only in circumstances where a consent applicant can demonstrate that they have had a high reliability of surface water for irrigation and/or prior to 22 February 2014, significant investment in infrastructure to take water has been made.*~~[182]

Policy 11.4.30

13.165 Policy 11.4.30 reads:

> *11.4.30 Enable existing resource consent holders to take groundwater where:*
> *(a) It will not have a direct or high stream depletion effect on a surface water body; and*
> *(b) An existing resource consent to take surface water or groundwater with a direct or high stream depletion effect greater than 5 L/s has been surrendered.*

13.166 Policy 11.4.30 received nine submissions and four further submissions.

13.167 Policy 11.4.30 provides the opportunity for consent holders to replace those surface and shallow groundwater takes that have a 'direct' and 'high' stream depletion effect (as described in Schedule 9) with takes from deeper groundwater. The intention is to reduce the effects of abstraction on base flows in the lowland spring-fed streams.

13.168 Policy 11.4.30 also supports implementation of Policy 11.4.5 which prohibits abstraction of surface water and 'direct' and 'high' stream depleting groundwater takes from the Waikekewai and Taumutu catchments because of their special cultural significance, by providing abstractors with a viable alternative when their consents expire.

13.169 Of the nine submissions received, two submissions request that the policy be retained, six submissions request the policy be amended and one submission requests that the Policy be deleted.

13.170 The Director General of Conservation and Ellesmere Irrigation Society support Policy 11.4.30 as a method of improving or stabilising flows in lowland streams and allowing existing shallow wells to be replaced with deeper wells where there is a direct or high stream depletion effect.

13.171 Nga Rūnanga and Te Rūnanga o Ngāi Tahu proposes a replacement suite of policies for Policies 11.4.21 to 11.4.32 though none appear to directly replace Policy 11.4.30.

13.172 Central Plains Water plans to arrange with some of its shareholders the transfer of resource consents to take water from the Rakaia River to Central Plains Water. It seeks that properties that transfer Rakaia water to the Central Plains Water scheme are supplied from groundwater. The Company states that the grant of additional groundwater consents would

[182] V1pLWRP-294 Te Taumutu Rūnanga; V1pLWRP-691 Fish and Game Council North Canterbury; V1pLWRP-220 Director General of Conservation

be more than balanced by the increased land surface recharge from the wider Central Plains Water scheme. The following amendment to Policy 11.4.30 is therefore requested:

"Enable existing resource consent holders to take groundwater where:

(a) An equivalent volume of surface water allocation from the Rakaia River is transferred to Central Plains; or

(b) It will not have a direct or high stream depletion effect on a surface water body; and ~~(c) A~~an existing resource consent to take surface water or groundwater with a direct or high stream depletion effect greater than 5 L/s has been surrendered."

13.173 The submitter's argument that where alpine water is transferred to Central Plains Water, an equivalent volume can be abstracted as groundwater on the basis that the abstraction is offset by increased land surface recharge is flawed. This would require all the alpine water to find its way into the groundwater system when presumably it would be used for irrigation resulting in a large proportion being lost from the catchment through plant uptake and evapotranspiration. Granting additional consents would have a negative impact on the water balance and undermine the basis of the Plan for improving groundwater levels and flows.

13.174 Also, the Rakaia-Selwyn and Selwyn-Waimakariri combined surface and groundwater allocation zones are significantly over-allocated. Where a limit is exceeded, allocating more water is a prohibited activity so as to avoid increasing the level of over-allocation. This would be contrary to the NPSFM. The submitter's proposal is not recommended to be accepted.

13.175 Horticulture NZ requests Policy 11.4.30 is deleted as it implies that existing resource consent holders are only able to continue taking groundwater where an existing consent with a direct or high stream depletion effect has been surrendered. The submitter considers this to be too onerous a requirement and it does not provide transition time for the effects of the Central Plains Water scheme to have an effect on groundwater levels.

13.176 Dairy Holdings considers that, as worded, Policy 11.4.30 enables existing resource consent holders to take water only where either condition (a) or (b) is met. The submitter may wish to clarify this matter at the hearing.

13.177 Synlait Farms and Synlait Milk request the inclusion of an additional clause: *c) Where non consumptive water use returns a near equal net benefit back to the environment.*

13.178 Selwyn DC requests that Policy 11.4.30(a) is amended to provide an exception for community water supply takes: *(a) It is a community water supply or it will not have a direct or high stream depletion effect on a surface water body; and*

13.179 The intent of Policy 11.4.30 has been misinterpreted by Horticulture NZ, Dairy Holdings, Synlait and Selwyn DC. The policy is not intended to apply in all circumstances such that there are no surface water or shallow groundwater takes. Rather, the policy gives resource consent holders with surface or shallow groundwater takes with a strong stream depletion

effect the option of replacing their takes with takes from deep groundwater. This benefits the abstractor, as no minimum flow condition would be imposed and there is improved reliability of supply. It would also result in less water being abstracted directly from the streams. The policy could be worded more clearly.

Recommendation R11.4.30

That Policy 11.4.30 is amended to read:

> ~~*"Enable existing resource consent holders to take groundwater where:*~~
>
> ~~*(a) It will not have a direct or high stream depletion effect on a surface water body; and*~~
> ~~*(b) An existing resource consent to take surface water or groundwater with a direct or high stream depletion effect greater than 5 L/s has been surrendered."*~~
>
> *Enable the granting of new water take permits for deep groundwater in those circumstances where:*
> *(a) the applicant holds a water permit to take surface water or groundwater with a direct or high stream depletion effect for an equal or greater rate and volume than is sought from deep groundwater; and*
> *(b) the surface water take or groundwater take with a direct or high stream depletion effect is surrendered.*[183]

New Policy (New Zealand King Salmon)

13.180 NZ King Salmon requests a new policy that reads:

> *"Enable groundwater takes which have a high or direct stream depletion effect greater than 5 L/s where the water taken is directly returned to the surface water body"*

13.181 The submitter considers that the policies and rules on abstraction are intentionally targeted at consumptive groundwater takes for irrigation and do not take into account groundwater takes which may be stream depleting, but where the water is discharged back to the water body after use, thereby having no effect on the minimum flow within the water body. The submitter states that its fish hatchery on the Tentburn Stream operates in this way with water taken from three bores being discharged into a fish race system and then eventually back into the Tentburn Stream. The submitter notes that while takes are stream depleting, there is little overall effect on the flows within the stream. NZ King Salmon considers there should be policy recognition of non-consumptive groundwater takes despite the requirements of any minimum flow regime. The submitter makes the same comments in relation to Rule 11.5.32(3).

13.182 Regional Rules 5.126 and 5.128 address the non-consumptive taking of surface water and Rules 5.131 and 5.132 the non-consumptive taking of groundwater and the Variation notes

[183] V1pLWRP-522 Selwyn District Council; V1pLWRP-1409 Horticulture NZ; V1pLWRP-1943 Dairy Holdings

that these rules apply within the Selwyn Te Waihora catchment. But, in both cases water is to be discharged back to the same surface water or the same groundwater body. The rules do not provide for the taking of water from one water body and its return to another 'connected' water body.

13.183 The submitter's proposal that groundwater takes that are discharged to surface water for hatcheries be considered non-consumptive may not be unreasonable given that surface water and groundwater are to be managed and allocated as a 'combined' resource within the catchment. It could also be considered a form of Targeted Stream Augmentation when flows are low.

13.184 However, the proposal that the policy applies to groundwater takes that are direct or highly stream depleting is not supported, for the reason that provisions in the Variation seek to encourage the use of deep groundwater in place of shallow groundwater and surface water in the lower catchment. There is also the potential for shallow takes to deplete more than one surface water body.

13.185 It is not proposed to add a new policy (or associated rule) at this stage. This does not preclude the submitter from providing more information to support its proposal at the hearing, including how it would demonstrate that the take from groundwater and return to surface water is truly non-consumptive and how potential environmental effects and the cultural acceptability of transferring groundwater to a surface water body would be addressed.

Recommendation New Policy (New Zealand King Salmon)

That no new policy be added.

New Policy (Te Taumutu Rūnanga)

13.186 Te Taumutu Rūnanga seeks that the Waiwhio/Irwell catchment is a sub-catchment where the feasibility and success of more immediate measures to address over-allocation can be implemented and states this would require:

- Policy to enable a staged reduction (in allocation) similar to the framework for reducing on farm nitrogen losses
- A review of all water takes consents in the catchment to return water to the waterway as per the flow recommended in the Cultural Opportunities Mapping and Response Study[184] (Cultural Flow Preference is 890-1100 L/s at Lake Road).

13.187 A bespoke regime for reducing allocation of water within the Irwell River catchment is not recommended. The approach is also considered unlikely to achieve the flow outcome sought

[184] Cultural Values, Flow and Water Management Issues for the Waikirikiri/Selwyn – Te Waihora Catchments (Tipa G, 2014)

by the submitter. This is because low flows in the Irwell River and other lowland streams stem largely from the cumulative effect of groundwater abstraction beyond the geographical extent of the surface water (rainfall) catchment itself. Flow in the Waiwhio/Irwell River is also hydraulically connected to flow in the Selwyn River which is fed from the whole catchment.

13.188 It is also noted that a Targeted Stream Augmentation project is looking to augment low summer flows across several lowland streams. The Waiwhio/Irwell River is one river that is a top priority and expected to benefit if the trial is successful.

13.189 In addition, abstractors within the Waiwhio/Irwell River catchment are unable to see the detail of what is being proposed by the submitter. The submitter may choose to explain its alternative approach for addressing over-allocation in the Waiwhio/Irwell River catchment in more detail at the hearing including further information on the timeframes and levels of reduction in allocation being proposed.

Recommendation New Policy (Te Taumutu Rūnanga)

That no new policy be added.

Rule 11.5.30

13.190 Rule 11.5.30 reads:

11.5.30 Within the Selwyn Waihora catchment Regional Rule 5.111 shall include the following additional condition:

1. The take is limited to an individual's domestic and stockwater use.

13.191 Rule 11.5.30 received three submissions, two in support from Christchurch City Council and NZ Defence Force and one in opposition from Synlait Milk. No further submissions were received on Rule 11.5.30.

13.192 Section 14(3)(b) of the RMA establishes a right for an individual to take and use a reasonable amount of water for domestic and stock drinking water requirements.

13.193 pLWRP Rules 5.111, 5.113 and 5.114 allow small volumes of surface water and groundwater to be taken and used as a permitted activity without the need for resource consent, on top of what may be taken as of right under the Section 14(3)(b) of the RMA. The region-wide assumption is that individually and cumulatively the impact of small surface water takes permitted under Rule 5.111 on environmental flow and allocation regimes is less than minor.

13.194 Rule 11.5.30 is intended to constrain an individual's permitted use of surface water under Section 14(3)(b) of the RMA to the rates and volumes in Regional Rule 5.111 and restrict the use to an individual domestic needs and stock drinking water.

13.195 This is considered an appropriate response for managing a risk that low flows are made worse in the lowland streams from potentially large numbers of permitted surface water takes under Rule 5.111. This is a particular risk given that the Selwyn Te Waihora Zone is estimated to have the most permitted water use within the Canterbury Region[185].

13.196 However, it is noted that in relation to the regional rules for "Small and Community Water Takes" the pLWRP includes a 'Note' which states *"Nothing in this Plan affects an individual's right to take water in accordance with section 14(3)(b) of the RMA"*.

13.197 Given this position, it is recommended that Rule 11.5.30 be simplified to state that permitted surface water takes under Rule 5.111 are not provided for within the Selwyn Te Waihora catchment and add a note that this does not impact on an individual's right to take water under section 14(3)(b) of the RMA.

13.198 Synlait Milk requests that surface water catchments that need protecting above others are identified and apply Rule 11.5.30 to those rather than a blanket approach, which the submitter also contends prevents alpine rivers from being used for small scale usage.

13.199 Rule 11.5.30 applies within the Selwyn Te Waihora catchment so would not apply to permitted takes from alpine rivers. It is appropriate that the rule be more targeted and applies to water bodies or areas that need protecting. It is proposed that the rule be amended to apply only within the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones in the area below State Highway 1. The reason being these two zones are over-allocated and the lower catchment streams within them potentially most at risk from permitted surface water takes aggravating low flows.

13.200 Users below SH1 impacted by Rule 11.5.30 would retain the option of abstracting small volumes of groundwater as a permitted activity for a variety of uses under Regional Rules 5.113 and 5.114. This is consistent with other provisions in the Variation 1 that seek to encourage groundwater rather than surface water abstraction at the bottom of the catchment.

Recommendation R11.5.30

Amend Rule 11.5.30 to read:

~~*11.5.30 Within the Selwyn Waihora catchment Regional Rule 5.111 shall include the following additional condition:*~~

~~*1. The take is limited to an individual's domestic and stockwater use.*~~

[185] Estimated permitted water use in Canterbury. Report R13/76 (Environment Canterbury 2013).

11.5.30 Within the Selwyn Te Waihora catchment Rule 5.111 does not apply within the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones below State Highway 1.[186]

New Rule 11.5.31A (Dairy Holdings Ltd)

13.201 Dairy Holdings seeks an additional Rule 11.5.31A which reads:

11.5.31A The taking and using of less than 5 L/s and more than 10 m³ but less than 100 m³ per day of groundwater is a permitted activity provided the following condition is complied with:

1. *The Property is more than 20 hectares in area; and*
2. *The bore is located more than 20 m from the site boundary where that site is in different ownership or any surface water body*

Note: A take under this rule can be in addition to the take and use of groundwater or surface water on the same Property by way of resource consent or irrigation scheme supply.

13.202 The submitter states that there is no provision in the Plan for takes of small volumes of groundwater for dairy shed supply and considers this particularly relevant where properties irrigated from surface water are converted or receive water from an irrigation scheme, which in both cases may be subject to restrictions.

13.203 The submitter seeks a new rule based on regional Rule 5.114 that authorises the take of water for dairy shed supply as a permitted activity even where a property holds existing groundwater takes.

13.204 Regional Rule 5.113 allows for 10 m^3 per day of groundwater to be taken as a permitted activity and Rule 5.114 allows up to 100 m^3 per day of groundwater to be taken as a permitted activity where the site is more than 20 ha in area.

13.205 However, CRC's interpretation of Rules 5.113 and 5.114 is that the amount permitted by a regional rule cannot be taken where a property holds, and is exercising an existing resource consent. In these circumstances irrigators are expected to use their consented water take for dairy shed supply. Where a property's consent to take surface water or groundwater is not being exercised the permitted groundwater volumes under Rules 5.113 and 5.114 can be abstracted and used for dairy shed supply.

13.206 In summary, it is not considered appropriate to create specific provisions for dairy shed supply for the Selwyn Te Waihora catchment that are different to the region-wide position. Particularly since allowing all dairy farms to take an additional 100 m^3 per day per day on top of their consented volume would increase over-allocation of water resources in the catchment.

[186] V1pLWRP-2048 Synlait Milk Ltd.

Recommendation R11.5.31A (Dairy Holdings Ltd)

That no additional rule be added.

Rule 11.5.32

13.207 Rule 11.5.32 reads:

Note: The taking and using of surface water from the Rakaia River or the Waimakariri River and groundwater with a hydraulic connection to the Rakaia River or the Waimakariri River must comply with the National Water Conservation (Rakaia River) Order 1998 or the relevant provisions in the Waimakariri River Regional Plan 2004.

11.5.32 The taking and use of surface water from a river, lake or wetland or groundwater within the Selwyn Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a restricted discretionary activity, provided the following conditions are met:

1. *The take in addition to all existing resource consented takes, does not result in any exceedance of any of the allocation limits in Table 11(e), 11(f) and 11(g); or*
2. *The proposed take is the replacement of a lawfully established surface water or groundwater take for which an application to continue the activity has been made under s124 of the RMA and there is no increase in the proposed rate of take or annual volume; and*
3. *A surface water or a groundwater take with a direct or high degree of stream depletion effect greater than 5 L/s determined in accordance with Schedule 9, complies with the minimum flow and restriction regime in Tables 11(c) and 11(d); and*
4. *A groundwater take within the West Melton Special Zone as shown on the Planning Maps complies with the level restrictions in Table 11(h); and*
5. *Unless it is associated with the artificial opening of a hāpua, lagoon or coastal lake to the sea, the take is not from a wetland or hāpua; and*
6. *For the renewal of an existing irrigation take the annual volume and maximum rate of take has been calculated in accordance with method 1 in Schedule 10; and*
7. *The take is not a surface water or groundwater take with a direct or high degree of stream depletion effect greater than 5 L/s, determined in accordance with Schedule 9, within the Waikekewai Creek and Taumutu Creek catchments; and*
8. *The bore interference effects are acceptable, as determined in accordance with Schedule 12.*

The exercise of discretion is restricted to the following matters:

1. *The rate, volume and timing of the water take; and*
2. *For new resource consent applications that are not a renewal of an existing consent, whether the amount of water to be taken and used is reasonable for the proposed use. In assessing reasonable use for irrigation purposes, the CRC will consider the matters set out in Schedule 10; and*
3. *The availability and practicality of using alternative supplies of water; and*

4. *The application efficiency where water is to be taken and used for irrigation; and*
5. *The proximity and actual or potential adverse environmental effects of water use on any significant indigenous biodiversity and adjacent dryland habitat; and*
6. *For a surface water takes:*
   (i) *The effects the take has on any other authorised takes or diversions; and*
   (ii) *Whether and how fish are prevented from entering the water intake; and*
   (iii) *The provisions of any relevant Water Conservation Order; and*
7. *For groundwater takes:*
   (i) *The maximum rate of take, including the capacity of the bore or bore field to achieve that rate, and the rate required to service any irrigation system; and*
   (ii) *the actual or potential adverse environmental effects the take has on any other authorised takes, including interference effects as set out in Schedule 12; and*
   (iii) *whether salt-water intrusion into the aquifer or landward movement of the salt water/fresh water interface is prevented; and*
   (iv) *the protection of groundwater sources, including prevention of backflow of water and contaminants; and*
   (v) *the appropriateness of applying adaptive management conditions.*

13.208 Rule 11.5.32 received 33 submissions and 29 further submissions, the majority in opposition or requesting various amendments.

13.209 Rules 11.5.32 to 11.5.36 replace the region-wide rules covering the taking and use of surface water and groundwater except for regional rules governing the non-consumptive taking and use of water (Rules 5.126, 5.127, 5.131 and 5.132).

13.210 There are a number of elements that are different from the region-wide rules. An important point of difference is that Rule 11.5.32 covers both surface water and groundwater within the same rule to reflect the allocation of water as a combined resource across the majority of the catchment. Its geographic scope relates to the Selwyn Te Waihora catchment including that part of the Little Rakaia Combined Surface and Groundwater Allocation Zone that is outside the Selwyn Te Waihora catchment.

13.211 Condition 1 requires that collectively takes do not exceed the allocation limits in Tables 11(e), 11(f) and 11(g) for three combined surface and groundwater allocation zones, one groundwater allocation zone and four surface water catchments respectively.

13.212 Condition 3 requires that surface water takes and groundwater takes that are assessed as stream depleting comply with the minimum flow and restriction regime in Tables 11(c) and (d).

13.213 Condition 4 requires those groundwater takes within the West Melton Special Zone to comply with the groundwater level management regime and reductions in take in Table 11(h) for this geographically defined area.

13.214 Condition 6 is specific to Variation 1 and the means by which over-allocation of water is to be reduced when replacement resource consents are sought. This requires that when

resource consents are replaced allocation is calculated using Method 1 in Schedule 10 which takes account of records of water use. Method 1 is also proposed to be modified by the Variation to provide water to fully meet demand conditions in 8.5 years out of 10.

13.215 Condition 7 is specific to the catchment. To recognise their high cultural importance no renewal of existing or new surface water or groundwater takes with a direct or high stream depletion effect are allowed from the Waikekewai Creek or Taumutu Creek.

13.216 The matters for discretion are the same as for the region-wide rules.

13.217 Of the 33 submissions received on Rule 11.5.32, 25 are opposed. Two submissions request that the rule is retained, one that the rule is deleted and 29 request amendments.

13.218 In addition, there were 3 submissions against the rule heading. Two submitters seek removal of restrictions on water use as they consider there is no proof that water is unavailable. One submitter seeks that the rules are amended so as not to allow an additional 30,000 ha of irrigation and an increase in the environmental footprint of farms.

13.219 Six further submissions were received on the suite of amendments proposed by Nga Rūnanga and Te Rūnanga O Ngāi Tahu. Five further submissions from Dunsandel Groundwater Users Group, Selwyn District Council, ANZCO Foods, Fonterra and Ellesmere Irrigation Society in opposition and one further submission from Federated Farmers partly in support.

13.220 It is helpful to consider submissions on each component of the rule.

Note and main Rule text

13.221 TrustPower is opposed to all the Rules 11.5.32 to 11.5.36 as the submitter considers they introduce a rule framework for the taking of surface water and an allocation regime for the Rakaia River. The submitter also questions how the allocation limit for the Little Rakaia Zone was calculated.

13.222 The submitter requests that the text of the 'Advice Note' is amended so that surface water takes and groundwater takes with a hydraulic connection to the Rakaia or Waimakariri River are managed via the Regional rules and/or Section 12 of the pLWRP (Canterbury Alpine Rivers) as well as comply with the Rakaia River WCO or the Waimakariri River Regional Plan. Associated with the above request, the submitter seeks that reference to the Little Rakaia Combined Surface and Groundwater Allocation Zone is deleted from the rules.

13.223 The reason for the boundary of the Little Rakaia Combined Surface and Groundwater Allocation Zone extending to the south bank of the Rakaia River is discussed under Policy 11.4.21 and is not repeated here. In summary, the purpose is to ensure that groundwater takes from Rakaia Islands are subject to the allocation limit for the Little Rakaia Zone. It is

not the intent of the rule framework to create an allocation regime for the Rakaia River itself.

13.224 It is proposed that the boundary of the Little Rakaia Combined Surface and Groundwater Allocation Zone be retained for the reasons stated under Policy 11.4.21 but that Rule 11.5.32 is amended to include a condition that the take does not conflict with the Rakaia River WCO or the Waimakariri River Regional Plan. It is also proposed that the 'Advisory Note' be deleted.

13.225 Selwyn DC and NZ Defence Force seek that Rule 11.5.32 is amended so that it does not apply to community water supplies.

13.226 Amending Rule 11.5.32 so that it does not apply to community water supply is unnecessary. The italicised text under the heading "Small and Community Water Takes" states that Regional Rule 5.115 (which provides for the taking and using of water for community water supply) applies in the Selwyn Te Waihora catchment.

11.5.32(1) and 11.5.32(2)

13.227 Ellesmere Irrigation Society and Bowden Environmental request that condition 1 is amended so that surface and groundwater are managed separately and references a new Table with a surface water environmental flow and allocation regime. HydroServices seeks that the condition is amended to recognise its request for separate Groundwater Allocation Zones and limits for each basaltic valley in the Kaituna area.

13.228 The submitters' proposal that surface and groundwater continue to be managed as separate resources is not supported for the reasons given under Policy 11.4.21 (and further expanded upon in the supporting technical report[187]).

13.229 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests that conditions 1 and 2 are combined into one condition with two sub-conditions. The submitter's proposed condition 1(b) effectively extends condition 11.5.32(2) to require that *"the proposed annual volume is reasonable for the intended use"*.

13.230 Combining conditions 1 and 2 is unnecessary.

11.5.32(3)

13.231 NZ King Salmon requests that condition 3 is amended to provide an exception to compliance with the minimum flow and restriction regime in Tables 11(c) and 11(d) for *"non-consumptive groundwater takes where the water taken is returned directly to the surface water body"*. This also links to a new policy proposed by the submitter on the same matter.

[187] Integrated Surface and Groundwater Management - Preferred Approach. Selwyn Waihora sub-regional section of the proposed Land and Water Regional Plan. Report R14/9 (Elemental Geoconsulting)

13.232 Region-wide rules on the non-consumptive taking and using of groundwater and surface water apply in the catchment and do not provide for the taking of groundwater and its return to surface water. On face value the submitter's proposal is not unreasonable given that groundwater and surface water are proposed to be managed and allocated as a combined resource within the catchment, if the take is truly non-consumptive. As noted under the new policy the submitter may wish to provide justification for an exemption at the hearing.

13.233 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests that condition 3 is amended by removing the text *"…direct of high degree of…"* stream depletion inferring that all takes with a stream depletion effect greater than 5 L/s are subject to the minimum flow restrictions.

13.234 Schedule 9 requires that only takes having a 'direct' stream depletion effect or 'high' stream depletion effect greater than the 'stream depletion cut off' [regional default 5 L/s] are subject to minimum flow restrictions. There is no technical justification for deviating from Schedule 9.

11.5.32(4)

13.235 I & CM McIndoe Partnership requests that condition 4 requiring compliance with the groundwater management regime and all references to the West Melton Special Zone are deleted. The submitter states that the concept of trigger levels, how they were set up and why, is historical, at the time based on a very poor understanding of how the groundwater system worked, the amount of irrigation water pumped and the effect that irrigation water use had on groundwater levels and Christchurch City water supplies.

13.236 The West Melton Special Zone is covered under Policies 9.4.8 and 11.4.33 and Rules 9.5.10 and 11.5.31. In summary, formalisation of the low groundwater level management regime that has been applied to consents in this area since the 1990s is a precautionary approach. One might expect that in future the management regime in the West Melton Special Zone may become redundant when the water balance in the catchment has improved through the addition of alpine water and the retirement of groundwater takes. For now, formalising the restrictions (maintains the status quo for consent holders) is recommended as the risks associated with terminating the regime for reliability for domestic, stock and public water supply bores are not easily quantified.

11.5.32(5)

13.237 Fish and Game requests that condition 5 be amended to include the protection of trout and salmon habitat as an additional requirement.

13.238 The submitter has not proposed specific wording changes. However, it is noted that under Part 2 of the RMA, Section 7 effectively requires that in exercising its functions the CRC must

have particular regard to specified matters. These include in matter 7(h) *"the protection of the habitat of trout and salmon"*.

13.239 Four further submissions were received on the above amendment with Dunsandel Groundwater Users Group, TrustPower and Central Plains Water in opposition and Federated Farmers partly in support.

11.5.32(6)

13.240 There were 13 submissions on condition 6, all in opposition. Most submitters lodged similar submissions to those against Policy 11.4.23. Most submitters either seek the deletion of condition 6 or that it is amended to allow Schedule 10 (Reasonable Use Test) to be used in its entirety for determining consented volumes.

13.241 In summary the main objections to condition 6 are:

- Existing water rights should not be adjusted down just because they have not been used as some crops do not require water all the time and a maximum limit is needed for dry years;
- Opposition to the term 'demonstrated use' (Policy 11.4.23) when Schedule 10 provides for 'reasonable use';
- Limiting calculation of reasonable use to Method 1 and elimination of Methods 2 and 3 (which gained acceptance through previous hearing processes for the NRRP, Rakaia-Selwyn groundwater consent review and the pLWRP);
- The change to Method 1 from an allocation based on demand in 9 to 8.5 years in 10 which will have economic and operational consequences for farm viability is not justified by the environmental outcomes;
- There is limited water metering data and it does not support the notion that users have been allocated more water than they need;
- Allocation based on 'demonstrated use' will encourage a 'use it or lose it response';
- Consented volumes are an absolute maximum to meet demand in dry years and there are deterrents to being reckless with water use including the cost of abstracting water;
- The calculation for 'demonstrated use' needs to allow for spikes in requirement due to severe drought conditions that may not be evident in short term usage analysis.
- Central Plains Water will reduce the need for 'claw back' or make it unnecessary.

13.242 Condition 6 is one of several provisions to reduce the paper allocation of water by taking account of records of past use. The rationale is that water use surveys and metering data indicate that average water use is between 40 to 60 percent of allocation. This is likely to be less than what would be used in an extreme dry year, but this level of use would indicate that some users have more allocation than they need. It is accepted that a more accurate picture of water use will develop now that measurement of water takes is a legal requirement[188].

[188] Resource Management (Measurement and Reporting of Water Takes) Regulations 2010

13.243 The aim is that any 'surplus water' is not re-allocated when consents are renewed. By itself this will not reduce abstraction pressure on the groundwater resource but redefining allocation in this way does provide for more effective management of allocation.

13.244 In response to those submissions that allocation needs to take account of climatic variation, it should be noted that Schedule 10 Method 1 uses records of past use, but these are to be 'moderated' to provide an annual volume to meet demand in all but the driest years.

13.245 Many submitters suggest Method 1 will encourage inefficient water use – a 'use it or lose it' approach. However, it is noted that the method provides an annual volume but does not state when water is available to users. This means people should not have to use water when it is available "just in case" but rather they are likely to want manage their annual volume more efficiently over an irrigation season.

13.246 It is accepted there may be some circumstances when there are limited records of water use which may make the application of Method 1 challenging. Even so, it is recommended that condition 6 be retained for the reasons presented in the introduction and under Policy 11.4.23, essentially that it is a primary method of reducing over-allocation of water in this catchment. However, as the subsequent rules provide for prohibited activity status if this condition is not met, there may need to be a transitional timeframe of potentially non-complying activity status for failing to comply with this condition, so that record keeping can be undertaken by those not currently required to do so or for those consent holders that do not have a lengthy record.

13.247 ANZCO & CMP express concern that there is potential for consent holders who irrigate land for the sole purpose of maintaining a land based discharge system for livestock processing wastewater to be captured by condition 6. The submitter seeks that condition 6 is amended to read *"For the renewal of an existing irrigation take <u>that is not associated with land based disposal of wastewater from industrial processing</u> the annual volume..."*

13.248 This clarification is not considered necessary. Schedule 10 provides three methods for determining seasonal irrigation demand and states that it does not apply to wastes that are discharged to land under an authorised discharge permit.

11.5.32(7) and 11.5.32(8)

13.249 Condition 7 only received one submission, from Ellesmere Irrigation Society, which requests that the prohibition on takes from the Waikekewai and Taumutu Creek catchments relates only to direct and high stream depleting groundwater takes greater than 5 L/s *"and* [is] *based on aquifer testing in the proximity of the proposed take"*.

13.250 There are no longer any consented surface water takes in the Waikekewai and Taumutu Creek catchments. Even so, it is not recommended to delete reference to surface water takes in condition 7 due to the cultural significance of the catchments and to avoid new applications to take surface water from these water bodies.

13.251 The submitter contends that stream depleting takes have been inappropriately based on modelled data by CRC that do not reflect the reality in the area where aquifer testing has shown the majority of wells are not stream-depleting. The submitter also requests that Schedule 9 be amended to recognise the use of nearby aquifer testing in the area relevant to a proposed take. The latter is considered out of scope for Variation 1.

13.252 The submitter's request that takes are not assessed as stream depleting unless proven through physical aquifer testing in the proximity of the take is not supported. However, it is noted that CRC's preferred approach to stream depletion is that aquifer testing, using observation wells, is undertaken to determine the hydraulic connection to surface water.

13.253 Assessments of stream depletion should be carried out at the time of application for a water permit. Historically however, in many cases a conservative desktop estimate of has been accepted in lieu of physical testing. Consequently, many areas have little or no aquifer information with which to carry out accurate stream depletion assessments.

13.254 Aquifer testing of wells is now required for all new consents unless reliable testing has been carried out. Testing is recommended for changes to conditions or replacement of a water permit to abstract water where the well is screened less than 50 m from the surface to confirm the hydraulic connection to surface water. Testing is at the applicant's cost except for those undertaken by CRC for research purposes.

Matters for Discretion

13.255 Several submitters request amendments or new matters for discretion.

13.256 Three submitters request different amendments to matter 7(v) on adaptive management conditions. Dunsandel Groundwater Users Group seeks that adaptive management conditions can only be considered for new consents or replacement consents where the consent being replaced is subject to adaptive management conditions to give effect to Policy 11.4.27. This is considered appropriate and consistent with the intent of Policy 11.4.27.

13.257 Malvern Hills Protection Society requests that matter 5 is amended to include trout and salmon.

13.258 Nga Rūnanga and Te Rūnanga o Ngāi Tahu and Te Taumutu Rūnanga request an additional matter *"the effects of the proposed take and use upon Ngāi Tahu cultural values"*.

13.259 The proposed matter of discretion is broad and does not provide the consent authority with certainty about what the values are. However, it is proposed that the matter of discretion relating to the Cultural Landscape/Values Management Area proposed in other rules is more specific as to the values to be protected and could apply in relation to water takes.

13.260 Synlait Farms and Synlait Milk seek an additional matter for (presumably enabling) takes where *"water is used for non-consumptive purposes and can contribute to a net gain for the zone"*. This addition is not considered necessary as regional Rules 5.131 and 5.132 provide for the non-consumptive taking and use of groundwater as a permitted and a discretionary activity.

13.261 Dairy NZ and Fonterra seek an additional matter to *"consider the staging of any increase in the minimum flow having regard to matters contained in Policy 11.4.29".* It is recommended to delete Policy 11.4.29 therefore this amendment becomes redundant.

13.262 Horticulture NZ requests an additional matter that considers the rotational nature of the farming operation.

Recommendation R11.5.32

That Rule 11.5.32 be amended as follows:

~~*Note: The taking and using of surface water from the Rakaia River or the Waimakariri River and groundwater with a hydraulic connection to the Rakaia River or the Waimakariri River must comply with the National Water Conservation (Rakaia River) Order 1998 or the relevant provisions in the Waimakariri River Regional Plan 2004.*~~[189]

11.5.32 The taking and use of surface water from a river, lake or wetland or groundwater within the Selwyn Te Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a restricted discretionary activity, provided the following conditions are met:

1. *The take in addition to all existing resource consented takes, does not result in any exceedance of any of the allocation limits in Table 11(e), 11(f) and 11(g); or*
2. *The proposed take is the replacement of a lawfully established surface water or groundwater take for which an application to continue the activity has been made under s124 of the RMA and there is no increase in the proposed rate of take or annual volume; and*
3. *A surface water or a groundwater take with a direct or high degree of stream depletion effect greater than 5 L/s determined in accordance with Schedule 9, complies with the minimum flow and restriction regime in Tables 11(c) and 11(d); and*
4. *A groundwater take within the West Melton Special Zone as shown on the Planning Maps complies with the level restrictions in Table 11(h); and*
5. *Unless it is associated with the artificial opening of a hāpua, lagoon or coastal lake to the sea, the take is not from a wetland or hāpua; and*
6. *For the renewal of an existing irrigation take the annual volume and maximum rate of take has been calculated in accordance with method 1 in Schedule 10; and*
7. *The take is not a surface water or groundwater take with a direct or high degree of stream depletion effect greater than 5 L/s, determined in accordance with Schedule 9, within the Waikekewai Creek and Taumutu Creek catchments; and*

[189] V1pLWRP-982 TrustPower

8. *The bore interference effects are acceptable, as determined in accordance with Schedule 12~~.~~;and*
9. *The take does not conflict with the National Water Conservation (Rakaia River) Order 1988 or the relevant provisions of the Waimakairiri River Regional Plan 2004.*[190]

The exercise of discretion is restricted to the following matters:

1. *The rate, volume and timing of the water take; and*
2. *For new resource consent applications that are not a renewal of an existing consent, whether the amount of water to be taken and used is reasonable for the proposed use. In assessing reasonable use for irrigation purposes, the CRC will consider the matters set out in Schedule 10; and*
3. *The availability and practicality of using alternative supplies of water; and*
4. *The application efficiency where water is to be taken and used for irrigation; and*
5. *The proximity and actual or potential adverse environmental effects of water use on any significant indigenous biodiversity and adjacent dryland habitat; and*
6. *For a surface water takes:*
   - *(i) The effects the take has on any other authorised takes or diversions; and*
   - *(ii) Whether and how fish are prevented from entering the water intake; and*
   - *(iii) The provisions of any relevant Water Conservation Order; and*
7. *For groundwater takes:*
   - *(i) The maximum rate of take, including the capacity of the bore or bore field to achieve that rate, and the rate required to service any irrigation system; and*
   - *(ii) the actual or potential adverse environmental effects the take has on any other authorised takes, including interference effects as set out in Schedule 12; and*
   - *(iii) whether salt-water intrusion into the aquifer or landward movement of the salt water/fresh water interface is prevented; and*
   - *(iv) the protection of groundwater sources, including prevention of backflow of water and contaminants; and*
   - *(v) the ~~appropriateness of applying~~ nature of any adaptive management conditions on new consents or replacement consents where the consent being replaced is subject to adaptive management conditions*[191]*; and*
8. *Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area;*[192]

Rule 11.5.33

13.263 Rule 11.5.33 reads:

11.5.33 Despite Rule 11.5.32 the taking and use of groundwater within the Selwyn Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a restricted discretionary activity provided the following conditions are met:

[190] V1pLWRP-982 TrustPower
[191] V1pLWRP-344 Dunsandel Groundwater Users Group
[192] V1pLWRP-449 Nga Rūnanga and Te Rūnanga O Ngāi Tahu

1. *The applicant holds a resource consent to take and use surface water or groundwater with a direct or high stream depletion effect greater than 5 L/s; and*
2. *The existing resource consent referred to in condition 1 is surrendered; and*
3. *The groundwater take will be abstracted from the same property as the existing resource consent and there is no increase in the proposed rate of take or annual volume; and*
4. *If the abstraction is from an up-plains location, it is below 50 m deep; or*
5. *If the abstraction is from a down-plains location, it is below 30 m deep or from the second confined aquifer; and*
6. *For an irrigation take the annual volume and maximum rate of take sought has been calculated in accordance with Method 1 in Schedule 10; and*
7. *The bore interference effects are acceptable, as determined in accordance with Schedule 12.*

The exercise of discretion is restricted to the following matters:

1. *The maximum rate of take, including the capacity of the bore or bore field to achieve that rate, and the rate required to service any irrigation system; and*
2. *Whether the amount of water to be taken and used is reasonable for the proposed use assessed in accordance with method 1 in Schedule 10; and*
3. *The effects the take has on any other authorised abstraction, including interference effects as indicated by a Step Test undertaken in accordance with the requirements of Schedule 11 and well interference calculated in accordance with the method in Schedule 12; and*
4. *Where the take is less than 2 km from the coast, whether salt-water intrusion into the aquifer or landward movement of the salt water/fresh water interface is prevented; and*
5. *The protection of groundwater sources, including the prevention of backflow of water or contaminants.*

Notification
Pursuant to sections 95A and 95B of the RMA an application for resource consent under this rule will be processed and considered without public or limited notification.

13.264 Rule 11.5.33 received 16 submissions and 11 further submissions. Two submitters seek that the rule be retained. The rest are in opposition and requesting the same or similar amendments as to Rule 11.5.32.

13.265 Rule 11.5.33 is intended to give effect to Policy 11.4.30. The rule is also intended to support Policy 11.4.5 that specifically recognises the cultural significance of the Waikekewai catchment as a wāhi tapu (sacred place).

13.266 Rule 11.5.33 allows an existing consent to take surface water or shallow groundwater (where there is a direct or high stream depletion effect greater than 5 L/s) to be surrendered and a replacement issued to take deep groundwater where there will not be a significant stream depletion effect.

13.267 The objective is to reduce immediate (near-field) effects of surface and shallow groundwater abstraction on flows in the lowland spring-fed streams. The benefit to the consent holder is the potential for an improvement in reliability (especially for surface water takes where

lowland streams are below their minimum flow for much of the irrigation season) and deeper takes are not subject to minimum flow restrictions. To exercise the replacement consent, holders will need to develop a new bore or deepen an existing bore.

13.268 Dairy Holdings, Dairy NZ, and Fonterra suggest amendment to the main rule text to make it clear that it only applies if the take is not already authorised under Rule 11.5.32.

13.269 Ellesmere Irrigation Society requests deletion of the reference to 'combined' surface and groundwater allocation zones. The submitter seeks that condition 1 and matter for discretion 3 are amended so that the assessment of well interference effects (Schedule 12) considers physical aquifer testing in proximity of the take (same submission point made in relation to Rule 11.5.32).

13.270 Nga Rūnanga and Te Rūnanga o Ngāi Tahu request several changes to Rule 11.5.33. Five further submissions were received from Selwyn DC, ANZCO & CMP, Fonterra, Dunsandel Groundwater Users Group and Federated Farmers mostly in opposition to the proposed amendments.

13.271 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks that conditions 4 and 5 (minimum depth for replacement groundwater takes) are replaced with *"the proposed groundwater take does not have a direct, high or moderate degree of stream depletion effect determined in accordance with Schedule 9"*.

13.272 Nga Rūnanga and Te Rūnanga o Ngāi Tahu also requests that condition 6 is amended such that any annual volume for the proposed groundwater take is calculated in accordance with the submitter's proposal for a 'reasonable use test' (submitter's Policy 14). The submitter may wish to elaborate its proposal and reasoning for the 'reasonable use test' at the hearing.

13.273 Nga Rūnanga and Te Rūnanga o Ngāi Tahu also proposes an additional condition that a Farm Environment Plan has been prepared in accordance with Schedule 7 and the level of compliance as an additional matter for discretion.

13.274 The thresholds and timing for Farm Environment Plans are clearly set out as within the Nutrient Management rules. Including a condition in Rule 11.5.33 is unnecessary.

13.275 Several submitters seek that condition 6 and matter for discretion 2 are deleted or amended to delete reference to Method 1 and instead allow Schedule 10 in its entirety to be used to determine annual volumes.

13.276 This is not supported for the reasons provided in relation to Policy 11.4.23 and Rule 11.5.32.

13.277 Nga Rūnanga and Te Rūnanga o Ngāi Tahu and Te Taumutu Rūnanga request the same additional matter of discretion as for Rule 11.5.32, to take account of the effects upon Ngāi Tahu cultural values.

13.278 Dairy NZ and Fonterra request the same additional matter of discretion to Rule 11.5.32 to allow consideration of a staged increase in the minimum flow. As noted under Rule 11.5.32 it is recommended to delete Policy 11.4.29 therefore this amendment becomes redundant.

13.279 Nga Rūnanga and Te Rūnanga o Ngāi Tahu opposes the proposal to process consents under this rule without public notification or limited notification on the basis that there are there are matters of discretion which may require the written approval of third parties.

13.280 This is not supported. A requirement for public notification is likely to discourage uptake of the opportunity provided by this rule which is intended to benefit the lowland streams whilst improving reliability for consent holders.

Recommendation R11.5.33

That Rule 11.5.33 be amended as follows:

11.5.33 Despite Rule 11.5.32 the taking and use of groundwater within the Selwyn Te Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a restricted discretionary activity provided the following conditions are met:

1. *The applicant holds a resource consent to take and use surface water or groundwater with a direct or high stream depletion effect greater than 5 L/s; and*
2. *The existing resource consent referred to in condition 1 is surrendered; and*
3. *The groundwater take will be abstracted from the same property as the existing resource consent and there is no increase in the proposed rate of take or annual volume; and*
4. *If the abstraction is from an up-plains location, it is below 50 m deep; or*
5. *If the abstraction is from a down-plains location, it is below 30 m deep or from the second confined aquifer; and*
6. *For an irrigation take the annual volume and maximum rate of take sought has been calculated in accordance with Method 1 in Schedule 10; and*
7. *The bore interference effects are acceptable, as determined in accordance with Schedule 12.*

The exercise of discretion is restricted to the following matters:

1. *The maximum rate of take, including the capacity of the bore or bore field to achieve that rate, and the rate required to service any irrigation system; and*
2. *Whether the amount of water to be taken and used is reasonable for the proposed use assessed in accordance with method 1 in Schedule 10; and*
3. *The effects the take has on any other authorised abstraction, including interference effects as indicated by a Step Test undertaken in accordance with the requirements of Schedule 11 and well interference calculated in accordance with the method in Schedule 12; and*
4. *Where the take is less than 2 km from the coast, whether salt-water intrusion into the aquifer or landward movement of the salt water/fresh water interface is prevented; and*
5. *The protection of groundwater sources, including the prevention of backflow of water or contaminants; and~~.~~*

6. *Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.*[193]

Notification
Pursuant to sections 95A and 95B of the RMA an application for resource consent under this rule will be processed and considered without public or limited notification.

New Rule 11.5.33A (Central Plains Water)

13.281 Central Plains Water seeks the introduction of a new Rule 11.5.33A that reads:

11.5.33A *Despite Rule 11.5.32 the taking and use of groundwater within the Selwyn-Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a restricted discretionary activity provided the following conditions are met:*

1. *The applicant holds a resource consent to take and use surface water or groundwater with a direct or high stream depletion effect greater than 5 L/s; and*
2. *The existing resource consent referred to in condition 1 is;*
   (a) *Transferred either in whole or in part to Central Plains in accordance with Rule 11.5.38(b) and;*
   (b) *Is for an equal volume than the take of groundwater for which consent is sought; and*
3. *If the abstraction is from an up-plains location, it is below 50 m deep; or*
4. *If the abstraction is from a down-plains location, it is below 30 m deep or from the second confined aquifer; and*
5. *the annual volume and maximum rate of take sought has been calculated in accordance with Method 1 in Schedule 10; and*
6. *The bore interference effects are acceptable, as determined in accordance with Schedule 12.*

13.282 Central Plains Water anticipates entering into arrangements with some of its shareholders, whereby their consents to take band 1, 2 and 3 water from the Rakaia River are transferred to Central Plains Water and that those properties are supplied with water from groundwater. The submitter contends that the grant of any additional groundwater consents would be more than balanced against increased drainage associated with the wider Central Plains Water Enhancement Scheme.

13.283 The proposed rule is not supported for the reasons provided under Policy 11.4.20. Firstly, the additional drainage (land surface recharge) from Central Plains Water scheme is already accounted for in setting the combined surface and groundwater allocation limits and integrated solution for achieving the environmental flow outcomes.

[193] V1pLWRP-450 Ngā Rūnanga and Te Rūnanga O Ngāi Tahu; V1pLWRP-317 Te Taumutu Rūnanga

13.284 Secondly, the two combined surface and groundwater allocation zone are considered over-allocated and one zone fully allocated. Granting additional consents would be expected to have a negative impact on the water balance and make achieving the flow outcomes more difficult.

13.285 Thirdly, the argument that additional groundwater consents would be more than balanced by increased drainage from the wider scheme is unsupported in the submission, and raises a number of questions. For example, if some of the Rakaia River consents anticipated to be transferred to Central Plains Water are currently used within the catchment they would be a component of the land surface recharge modelled in the solution package rather than additional recharge. It is not clear how the increased drainage from the application of transferred surface water would offset the additional groundwater consents when presumably the transferred surface water would be used for irrigation and plant uptake.

Recommendation R11.5.33A (Central Plains Water)

That no additional rule be added.

Rule 11.5.34

13.286 Rule 11.5.34 reads:

> *11.5.34 Despite Rule 11.5.32 the taking and use of surface water or groundwater for the sole purpose of augmenting groundwater or surface water to increase stream flows in the Selwyn Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a discretionary activity.*

13.287 Rule 11.5.34 received six submissions and three further submissions.

13.288 Rule 11.5.34 is intended to give effect to Policy 11.4.20 and enable the take and use of water solely for environmental benefit as a discretionary activity where conditions in Rule 11.5.32 cannot be complied with, in particular where catchment allocation limits are exceeded. A potential example is the targeted augmentation of streams through the use of artesian groundwater near spring heads to supplement summer low flows either directly or via the shallow groundwater system. This is an efficient and potentially inexpensive option.

13.289 The Director General of Conservation and one other submitter seek that the rule is retained. Four submitters seek amendments.

13.290 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests the addition of two conditions to comply with the NPSFM and avoid further over-allocation of water:

> 1. *"The proposed take in addition to all existing resource consented takes does not result in any exceedance of any of the allocation limits in Table 11 (e), 11 (f) and 11(g); or*

2. *The proposed take is a replacement of a lawfully established surface or groundwater take for which an application to continue the activity has been made under s124 of the RMA and there is no increase in the proposed rate of take and the annual volume and the proposed annual volume is reasonable for the intended use".*

13.291 This runs counter to what is intended by the rule. Because the allocation limits for the majority of the catchment are significantly exceeded, the conditions proposed by the submitter would have the effect of prohibiting the take and use of water to improve stream flows.

13.292 Because groundwater and surface water are allocated and managed as a single combined resource it is considered the take and use of water under this policy would in effect be non-consumptive and so not increase over-allocation of water.

13.293 It is noted that whilst the regional rules on the non-consumptive take and use of surface water (Rule 5.126) and groundwater (Rule 5.131) apply in this catchment, in several respects they are too constraining for the purpose intended here. For example, in the case of groundwater, the discharge must be to the same aquifer, within 50 m of the abstraction point and for domestic purposes only.

13.294 It is considered that the full discretionary status of Rule 11.5.34, together with Rules 11.5.40 and 11.5.41 that cover the discharge, allows all adverse effects to be adequately addressed.

13.295 Ellesmere Irrigation Society and TrustPower seek that reference to the Little Rakaia Combined Surface and Groundwater Allocation Zone is deleted for different reasons.

13.296 This is not supported for the reasons provided in relation to the Little Rakaia Combined Surface and Groundwater Allocation Zone under Policy 11.4.21 and proposed amendments to Rule 11.5.32.

Recommendation R11.5.34

That Rule 11.5.34 be amended as follows:

11.5.34 Despite Rule 11.5.32 the taking and use of surface water or groundwater for the sole purpose of augmenting groundwater or surface water to increase stream flows in the Selwyn Te Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone is a discretionary activity.

Rules 11.5.35 and 11.5.36

13.297 Rule 11.5.35 reads:

11.5.35 The taking and use of surface water from a river, lake or wetland or groundwater within the Selwyn Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone that does not meet Conditions 3, 4, 5 or 8 in Rule 11.5.32 is a non-complying activity.

13.298 Rule 11.5.36 reads:

11.5.36 The taking and use of surface water from a river, lake or wetland or groundwater within the Selwyn Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone that does not meet Conditions 1, 2, 6 or 7 of Rule 11.5.32 or Rule 11.5.33 or Rule 11.5.34 is a prohibited activity.

Rule 11.5.35

13.299 Rule 11.5.35 received seven submissions and seven further submissions. All submissions seek amendments to the rule.

13.300 Rule 11.5.35 makes takes that do not comply with: the minimum flow and restriction regime; the West Melton Special Zone groundwater level restrictions; are from a wetland or hāpua; or have unacceptable bore interference effects, a non-complying activity.

13.301 The Director General of Conservation seeks that non-compliance with condition 3 (the minimum flow and restriction regime) is made a prohibited activity under Rule 11.5.36.

13.302 This issue is discussed under Policy 11.4.29. It is proposed that Policy 11.4.29 be deleted on the basis that revised minimum flows would not take effect for 10 years by which time it is expected that the low flows will have improved from the Central Plains Water scheme and addition of alpine water to the catchment. Ten years is also considered a reasonable amount of time to adjust operations to meet the new minimum flow or take advantage Policy 11.4.30 which allows surface water and shallow groundwater abstractors to switch their takes to deep groundwater instead.

13.303 In view of this, it is considered appropriate that non-compliance with the minimum flow regime attracts prohibited activity status under Rule 11.5.36 instead of non-complying status under Rule 11.5.35. This is also more efficient as it reduces the risk of litigating the minimum flow on a case by case basis and brings the activity status in line with the prohibited status under the regional rules.

13.304 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks that non-compliance with its proposed two additional conditions under Rule 11.5.34 becomes a non-complying activity to ensure compliance with the NPSFM.

13.305 The additional conditions proposed are not recommended to be accepted therefore this amendment would not apply.

13.306 Ellesmere Irrigation Society and TrustPower seek that reference to the Little Rakaia Combined Surface and Groundwater Allocation Zone is deleted but for different reasons.

13.307 Selwyn DC requests that Rule 11.5.35 is amended such that it does not apply to takes for community water supply.

13.308 This is unnecessary for the reason given under Rule 11.5.32, namely that Regional Rule 5.115 provides for the taking and using of water for community water supply and applies in the Selwyn Te Waihora catchment.

13.309 HydroServices requests Rule 11.5.35 be amended (or amend Rule 11.5.32 or create a new rule) to allow new takes from the Kaitorete Spit area either as a separate allocation zone or as a defined area within the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone.

13.310 Based on technical advice provided in response to the submitter's request it is not proposed to provide for new takes from Kaitorete Spit or create a separate allocation zone (see full response from Dr Williams in Appendix D).

Recommendation R11.5.35

That Rule 11.5.35 is amended as follows:

> *11.5.35 The taking and use of surface water from a river, lake or wetland or groundwater within the Selwyn Te Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone that does not meet Conditions ~~3,~~[194] 4, 5 or 8 in Rule 11.5.32 is a non-complying activity.*

Rule 11.5.36

13.311 Rule 11.5.36 received 12 submissions and five further submissions with the majority in opposition to the rule.

13.312 Rule 11.5.36 classifies takes that do not comply with the water allocation limits; are not the replacement of an existing take; the annual volume is not calculated in accordance with Method 1 Schedule 10; is a surface water or stream depleting groundwater take from the Waikekawai catchment; do not comply with Rule 11.5.33 or 11.5.34 as a prohibited activity.

13.313 Ellesmere Irrigation Society and TrustPower seek that reference to the Little Rakaia Combined Surface and Groundwater Allocation Zone is deleted, but for different reasons. This is not supported

13.314 The Director General of Conservation seeks that non-compliance with condition 3 (minimum flows) of Rule 11.5.32 is changed from a non-complying to a prohibited activity status under

[194] V1pLWRP-244 Director General of Conservation

Rule 11.5.36. This is recommended to be accepted for the reasons provided under Rule 11.5.35 and Policy 11.4.29.

13.315 Several submitters consider prohibited activity status to be unduly onerous and would prohibit activities that have minor adverse effects but significant social and economic benefits. Four submitters request that the activity status is amended to non-complying and one that it is amended to discretionary.

13.316 Synlait Farms and Synlait Milk seek deletion of the reference to Rule 11.5.33 and that non-consumptive takes and takes in Zones that are not over-allocated should not be prohibited.

13.317 It is not appropriate to reduce the activity threshold for non-compliance with the Rule 11.5.33 which aims to prevent surface water and shallow groundwater abstractions further reducing low flows by enabling consent holders to take deep groundwater where surface or shallow (stream depleting) groundwater takes are surrendered. As noted under Rule 11.5.33 this also benefits the consent holder as no minimum flow would be imposed and they would likely experience improved reliability.

13.318 The submitter may choose to explain the circumstance and decision it is seeking in respect of non-consumptive takes at the hearing as this is not fully explained in the submission. Regional rules apply to the non-consumptive taking of surface and groundwater within the Selwyn Te Waihora catchment. In the case of groundwater where the (limited) permitted activity conditions are not met the activity status defaults to discretionary, not prohibited as the submitter suggests.

Recommendation R11.5.36

That Rule 11.5.36 be amended as follows:

> *11.5.36 The taking and use of surface water from a river, lake or wetland or groundwater within the Selwyn Te Waihora catchment and including all areas within the Little Rakaia Combined Surface and Groundwater Allocation Zone that does not meet Conditions 1, 3,[195] 2, 6 ~~or~~ 7 or 9[196] of Rule 11.5.32 or Rule 11.5.33 or Rule 11.5.34 is a prohibited activity.*

New Rule 11.5.36A (Dairy Holdings)

13.319 Dairy Holdings requests an additional rule as follows:

11.5.36A The take and use of groundwater as part of a Water Users Group in the Selwyn Waihora catchment is a discretionary activity, provided the following conditions are met:

1. *All members of the Water Users Group have a condition on their resource consent that provides for the establishment of a Water users Group and requires abstraction rates and volumes to recorded at no less than 15 minute intervals; and*

[195] V1pLWRP-245 Director General of Conservation
[196] V1pLWRP-982 TrustPower consequential amendment from Rule 11.5.32

2. *<u>The total take by all members of the Water Users Group does not exceed the total combined rate and volume available to all members by virtue of the Water Users Group</u>*

[Note: the text of the proposed new Rule number in the submission is 11.5.10A but is presumed to be an error as the associated commentary refers to a new Rule 11.5.36A]

13.320 The submitter states that it has two existing and established water user groups in relation to its surface water and groundwater resources, which provide an effective mechanism for Dairy Holdings to manage its water resources in times of restriction.

13.321 A Water User Group (WUG) is defined in the pLWRP as a group of users with existing authorisations to take water, voluntarily grouped together to collectively manage the water resource allocated to them, primarily during times of restriction.

13.322 Regional Council guidance notes that a WUG can only be formed to share water between water takes that are like for like, that is:

- Surface water takes and/or groundwater takes with a direct degree of hydraulic connection to a surface water body (i.e. all the water is derived from a river); or
- Groundwater takes without a connection to a surface water body (i.e. all the water is derived from an aquifer).

13.323 In relation to the first bullet, Regional Policy 4.62(3) provides for the sharing of water amongst water permit holders in the same sub-catchment to prevent surface waters falling below the minimum flow due to abstraction.

13.324 There is no clear policy on the second bullet, the sharing of groundwater, as (presumably) proposed by the submitter. At face value the policy to share groundwater allocations raises concerns because in this catchment a reduction in water allocation is needed alongside the addition of alpine water to meet ecological and cultural flow outcomes.

13.325 The concern with enabling Groundwater Water User Groups is that the effects are the same as enabling water permit transfers in an over-allocated catchment, that is, the transfer and use of surplus water amongst the WUG members would lead to higher volumes and rates of abstraction per irrigation season than would occur if water was only allocated to individual users.

13.326 Moreover, the formation of Groundwater User Groups may be seen as a means of avoiding or 'getting around' the restrictions on the transfer of water permits. For example, by forming a WUG between Central Plains Water scheme shareholders and users outside the scheme area. This would work against provisions in the Variation aimed at reducing allocation to improve the catchment water balance and improved flows outcomes for the lowland streams.

13.327 It is not recommended to add the additional rule.

Recommendation R11.5.36A (Dairy Holdings Ltd)

That no additional rule be added.

Schedule 13

13.328 The following is an amendment to Schedule 13 and reads:

> *Schedule 13 – Requirements for implementation of water allocation regimes*
> *Within the Selwyn Waihora catchment the following additional requirement for combined groundwater and surface water regimes applies.*
>
> *Combined groundwater and surface water allocation regimes*
> *(1) The amount of water allocated within a water allocation block is the sum of each seasonal or annual volume of each groundwater take and surface water take;*
> *(2) The seasonal or annual volume allocated is to be determined as either:*
> *(a) that specified as part of a water permit; or*
> *(b) when not specified as part of a water permit, the annual volume shall be determined in the same way as set out for groundwater allocation zones in Schedule 13 above.*

13.329 The addition to Schedule 13 is required to set out how allocation is calculated for combined surface and groundwater allocation zones of which there are three within the area covered by Variation 1 (Rakaia-Selwyn, Selwyn-Waimakariri and Little Rakaia).

13.330 Two submissions were received on the proposed addition to Schedule 13 from Bowden Environmental and Ellesmere Irrigation Society. Both submitters seek deletion of the proposed change and reflect their opposition to the proposal to manage surface and groundwater as a single resource.

13.331 Bowden Environmental also seeks that Schedule 13 is amended to calculate an effective allocation of 85% of the consented allocation (to reflect average usage) and compare this figure to the limit. This was the approach under the NRRP. The submitter also requests the audit of all current consents prior to implementing any new allocation regime.

13.332 The above requests are not proposed to be accepted for reasons stated in relation to other policies and rules. The amendment sought to Schedule 13 to include the term and concept of "effective allocation" is not supported as this was not carried forward from the NRRP into the pLWRP. It is also considered out of scope for Variation 1.

13.333 It is proposed that the term *"allocation block"* in the proposed addition to Schedule 13 is amended to *"allocation limit"* to be consistent with the rest of Schedule 13.

Recommendation R Schedule 13 – Requirements for implementation of water allocation regimes

That the proposed amendment to Schedule 13 be amended as follows:

Within the Selwyn Te Waihora catchment the following additional requirement for combined groundwater and surface water regimes applies.

Combined groundwater and surface water allocation regimes

(3) The amount of water allocated within a water allocation ~~block~~ limit[197] is the sum of each seasonal or annual volume of each groundwater take and surface water take;

(4) The seasonal or annual volume allocated is to be determined as either:

(c) that specified as part of a water permit; or

(d) when not specified as part of a water permit, the annual volume shall be determined in the same way as set out for groundwater allocation zones in Schedule 13 above.

Rules 11.5.40 and 11.5.41

13.334 Rule 11.5.40 reads:

11.5.40 The discharge of water into water or onto or into land for the purpose of augmenting groundwater or surface water to increase stream flows within the Selwyn Waihora catchment is a restricted discretionary activity, provided the following conditions are met:

1. *The discharge is part of a trial for investigative purposes and for a duration not exceeding 5 years; and*
2. *The activity does not take place on a site listed as an archaeological site; and*
3. *The discharge is not within a Group or Community Drinking Water Protection Zone as set out in Schedule 1; and*
4. *The discharge is not within 100 m of any well used to supply potable water.*

The exercise of discretion is restricted to the following matters:

1. *The location, method and timing of the discharge to groundwater or surface water; and*
2. *The adequacy of the scheme design, construction, operation, monitoring, reporting and management processes; and*
3. *The appropriateness of integration with existing or planned infrastructure and water conveyance systems; and*
4. *Any adverse effects on people and property from raised groundwater levels and higher flows; and*
5. *Any adverse effects on water quality in the receiving aquifer or river, significant habitats of indigenous flora and fauna or sites of importance to Ngāi Tahu from moving water from one catchment or waterbody to another; and*
6. *Any adverse effects on sites or areas of wāhi tapu, wāhi taonga or mahinga kai within the Cultural Landscape/Values Management Area; and*
7. *The potential benefits of the activity to the community and the environment.*

[197] Consequential amendment for consistency with pLWRP Schedule 13

13.335 Rule 11.5.41 reads:

> *11.5.41 The discharge of water into water or onto or into land for the purpose of augmenting groundwater or surface water to increase stream flows in the Selwyn Waihora catchment that does not meet one or more of the conditions of Rule 11.5.40 is a discretionary activity.*

13.336 Rule 11.5.40 received four submissions, all in support, and five further submissions. Rule 11.5.41 received two submissions and one further submission.

13.337 Rules 11.5.40 and 11.5.41 manage the discharge of water associated with Managed Aquifer Recharge (MAR) and Targeted Stream Augmentation (TSA). They work in conjunction with Rule 11.5.34 which enables the abstraction of water for the same purpose (from catchment water sources). Collectively all three rules support Policy 11.4.20 which encourages MAR and TSA to improve flows and the ecological and cultural health of streams.

13.338 The restricted discretionary activity status in Rule 11.5.40 is intended to make MAR and TSA trials relatively easy whereas Rule 11.5.41 requires any permanent scheme to be judged on its merits as a full discretionary activity.

13.339 Te Taumutu Rūnanga requests an additional condition that *"the discharge is for the purpose of the* restoration *of flows for ecological and cultural purposes"* and that matter of discretion 5 is modified to allow consideration of the "*values"* of importance to Ngāi Tahu.

13.340 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests the addition of a new condition that *"the discharge is not directly into water"*.

13.341 Synlait Milk seeks that Rule 11.5.40 be amended to enable the discharge of clean wastewater that does not adversely affect the receiving environment.

13.342 Ellesmere Irrigation Society supports the retention of Rules 11.5.40 and 11.5.41.

13.343 The amendments proposed by Te Taumutu Rūnanga are supported. It is considered that for clarity matter for discretion 5 could be split to separate ecological and cultural values. The request that the discharge is not directly to water proposed by Nga Rūnanga and Te Rūnanga o Ngāi Tahu is captured within the proposed amendment by Te Taumutu Rūnanga on matter 6. In addition, explicitly ruling out discharges directly into water may prematurely foreclose options where this may be beneficial and acceptable from a cultural viewpoint.

Recommendation R11.5.40

That Rule 11.5.40 be amended as follows:

> *11.5.40 The discharge of water into water or onto or into land for the purpose of augmenting groundwater or surface water to increase stream flows within the*

Selwyn Te Waihora catchment is a restricted discretionary activity, provided the following conditions are met:

1. *The discharge is part of a trial for investigative purposes and for a duration not exceeding 5 years; and*
2. *The activity does not take place on a site listed as an archaeological site; and*
3. *The discharge is not within a Group or Community Drinking Water Protection Zone as set out in Schedule1; and*
4. *The discharge is not within 100 m of any well used to supply potable water; and.*
5. *The discharge is for the purpose of the restoration of flows for ecological or cultural benefit.*[198]

The exercise of discretion is restricted to the following matters:

1. *The location, method and timing of the discharge to groundwater or surface water; and*
2. *The adequacy of the scheme design, construction, operation, monitoring, reporting and management processes; and*
3. *The appropriateness of integration with existing or planned infrastructure and water conveyance systems; and*
4. *Any adverse effects on people and property from raised groundwater levels and higher flows; and*
5. *Any adverse effects on water quality in the receiving aquifer or river, significant habitats of indigenous flora and fauna; and*
6. *Any adverse effects on ~~or~~ sites or values*[199] *of importance to Ngāi Tahu from moving water from one catchment or waterbody to another; and*
7. *Any adverse effects on sites or areas of wāhi tapu, wāhi taonga or mahinga kai within the Cultural Landscape/Values Management Area; and*
8. *The potential benefits of the activity to the community and the environment.*

Recommendation R11.5.41

That Rule 11.5.41 be amended as follows:

11.5.41 The discharge of water into water or onto or into land for the purpose of augmenting groundwater or surface water to increase stream flows in the Selwyn Te Waihora catchment that does not meet one or more of the conditions of Rule 11.5.40 is a discretionary activity.

Tables 11(c) and (d)

13.344 Tables 11(c) and 11(d) read:

Table 11(c): Selwyn Waihora Minimum Flows and Partial Restriction Regime for A Permits

[198] V1pLWRP-318 Te Taumutu Rūnanga
[199] V1pLWRP-318 Te Taumutu Rūnanga

River or stream (See Planning Maps)	*Location of recorder site or site where flow is measured*	*Topo 50 Map Reference*	*Minimum Flows*		*Restriction Regime*
			Minimum flow for A permits (L/s) Before 1 July 2025	*Minimum flow for A permits (L/s) From 1 July 2025 (on consent expiry)*	*Flow at which pro-rata restrictions start (L/s) From 1 July 2025 (on consent expiry)*
Baileys Creek	*Baileys Creek at Lincoln Leeston Road*	*BX23:51407-64392*	*As per existing minimum flow conditions on a resource consent*	*40*	*88*
Birdlings Brook	*Birdlings Brook at Leggs Road*	*BY23:45311-50397*	*As per existing minimum flow conditions on a resource consent*	*440*	*564*
Birdlings Brook	*Birdlings Brook at Lochheads Road*	*BY23:44711-51196*	*As per existing minimum flow conditions on a resource consent*	*480*	*499*
Boggy Creek	*Boggy Creek at Lower Lake Road*	*BY23:48309-53896*	*As per existing minimum flow conditions on a resource consent*	*261*	*331*
Halswell River	*Halswell River at Neills Road*	*BX23:63003-6159 4*	*As per existing minimum flow conditions on a resource consent*	*640*	*815*
Halswell River	*Halswell River at Hodgens Bridge*	*BX24:65403-57696*	*As per existing minimum flow conditions on a resource consent*	*70% 7DMALF*	*70% 7DMALF + 90*
Halswell River	*Halswell River at Leadleys Road*	*BX24:64402-71691*	*As per existing minimum flow conditions on a resource consent*	*400*	*495*
Halswell River	*Halswell River at Tobecks Bridge*	*BX23:60804-64593*	*As per existing minimum flow conditions on a resource consent*	*650*	*752*

River or stream (See Planning Maps)	*Location of recorder site or site where flow is measured*	*Topo 50 Map Reference*	*Minimum Flows*		*Restriction Regime*
			Minimum flow for A permits (L/s) Before 1 July 2025	*Minimum flow for A permits (L/s) From 1 July 2025 (on consent expiry)*	*Flow at which pro-rata restrictions start (L/s) From 1 July 2025 (on consent expiry)*
Halswell River	*Halswell River at D/S of Knights Creek diversion*	*BX23:63802-71991*	*As per existing minimum flow conditions on a resource consent*	*90% 7DMALF*	*90% 7DMALF + 25*
Halswell River – Knights Creek tributary	*Knights Creek at Jamiesons Property*	*BX23:63802-71991*	*As per existing minimum flow conditions on a resource consent*	*220*	*245*
Hanmer Road Drain	*Hanmer Road Drain at Lower Lake Road*	*BX23:49409-55495*	*As per existing minimum flow conditions on a resource consent*	*250*	*264*
Harts Creek	*Harts Creek at Lower Lake Road*	*BY23:45851-50287*	*As per existing minimum flow conditions on a resource consent*	*1100*	*1336*
Harts Creek	*Harts Creek at Timber Yard Road*	*BY23:46790-50427*	*As per existing minimum flow conditions on a resource consent*	*1100*	*1336*
Hawkins River	*Hawkins River at Willows-Dalethorpe Road*	*BW21:05709-96450*	*As per existing minimum flow conditions on a resource consent*	*35*	*97*
Hawkins River	*Stokes Stream (Hawkins) at Dalethorpe Road*	*BW21:15396-96681*	*As per existing minimum flow conditions on a resource consent*	*27 (residual flow)*	*N/a*
Hororata River	*Hororata River at Haldon Water Race Bridge*	*BX22:19716-74487*	*As per existing minimum flow conditions on a resource consent*	*30*	*101*

River or stream (See Planning Maps)	*Location of recorder site or site where flow is measured*	*Topo 50 Map Reference*	*Minimum Flows*		*Restriction Regime*
			Minimum flow for A permits (L/s) Before 1 July 2025	*Minimum flow for A permits (L/s) From 1 July 2025 (on consent expiry)*	*Flow at which pro-rata restrictions start (L/s) From 1 July 2025 (on consent expiry)*
Irwell River	*Irwell River at Leeston Christchurch Road*	*BX23:47409-58794*	*As per existing minimum flow conditions on a resource consent*	*90% 7DMALF*	*90% 7DMALF + 19*
Irwell River	*Irwell River at Lake Road*	*BX23:49789-56245*	*As per existing minimum flow conditions on a resource consent*	*890*	*923*
Unnamed drain at Prendergast property – tributary of Irwell River	*Unnamed Drain at Prendergast property*	*BX23:52108-57895*	*As per existing minimum flow conditions on a resource consent*	*26 (residual flow)*	*N/a*
Jollies Brook	*Jollies Brook at outlet to sea*	*BY23:41014-41000*	*As per existing minimum flow conditions on a resource consent*	*360*	*708*
Kaituna River	*Kaituna River at Kaituna Valley Road*	*BX24:74399-54998*	*As per existing minimum flow conditions on a resource consent*	*60*	*104*
Lee River	*Lee at Temoana*	*BY23:42513-45198*	*As per existing minimum flow conditions on a resource consent*	*70% 7DMALF*	*70% 7DMALF + 189*
L-II River	*L-II River at Moir's Property*	*BX23:59204-66392*	*As per existing minimum flow conditions on a resource consent*	*160*	*259*
L-II River	*L-II River at Wolfes Road*	*BX23:55506-60094*	*As per existing minimum flow conditions on a resource consent*	*1240*	*1469*

River or stream (See Planning Maps)	*Location of recorder site or site where flow is measured*	*Topo 50 Map Reference*	*Minimum Flows*		*Restriction Regime*
			Minimum flow for A permits (L/s) Before 1 July 2025	*Minimum flow for A permits (L/s) From 1 July 2025 (on consent expiry)*	*Flow at which pro-rata restrictions start (L/s) From 1 July 2025 (on consent expiry)*
Selwyn River	*Selwyn River at Coes Ford*	*BX23:52643-61694*	*As per existing minimum flow conditions on a resource consent*	*1200*	*1412*
Selwyn River	*Selwyn River at Whitecliffs*	*BX21:10512-87228*	*As per existing minimum flow conditions on a resource consent*	*550*	*638*
Selwyn River	*Selwyn River at Rennie Property D/S of Intake*	*BX23:54207-60494*	*As per existing minimum flow conditions on a resource consent*	*600 (residual flow)*	*N/a*
Silverstream	*Silverstream at Lincoln Leeston Road*	*BX23:50808-63793*	*As per existing minimum flow conditions on a resource consent*	*80*	*104*
Snake Creek	*Snake Creek at Lincoln Leeston Road*	*BX23:50008-63093*	*As per existing minimum flow conditions on a resource consent*	*60*	*73*
Taumutu Creek	*Taumutu Creek at D/S Gulliver Intake*	*BY23:47610-43519*	*As per existing minimum flow conditions on a resource consent*	*No abstraction*	*N/a*
Tent Burn Stream	*Beechcroft Road*	*BY23:42413-42599*	*As per existing minimum flow conditions on a resource consent*	*90% 7DMALF*	*90% 7DMALF + 122*
Waikekewai Creek	*Waikekewai Creek at Taumutu Beach*	*BY23:48311-44099*	*As per existing minimum flow conditions on a resource consent*	*No abstraction*	*N/a*

Table 11(d) Selwyn Waihora Minimum Flows for B Permits

River or stream (See Planning Maps)	*Location of recorder site or site where flow is measured*	*Topo 50 Map Reference*	*Minimum flow for B permits (L/s) Before 1 July 2025*	*Minimum flow for B permits (L/s) From 1 July 2025 (on consent expiry)*
Kaituna River	*Kaituna River at Kaituna Valley Road*	*BX24:74399-54998*	*As per existing minimum flow conditions on a resource consent*	*522*

13.345 There were 14 submissions on Table 11(c) and 28 further submissions. There were five submissions on Table 11(d) and 17 further submissions. The majority are in opposition and seek their deletion entirely or various (conflicting) amendments.

13.346 Tables 11(c) and 11(d) contain the minimum flow and restriction regimes for A permits (run of river takes) and B permits (takes at higher flow, usually to storage) to apply upon consent renewal from 2025.

13.347 For the major part of the catchment surface water and groundwater are allocated as a combined resource through a single limit for each of the Little Rakaia, Rakaia-Selwyn and Selwyn-Waimakariri zones (as an annual volume in millions of cubic metres per year). There are no separate surface water allocation limits for each stream or river (as a flow rate in litres/second). Instead, surface water takes must fit within the overall allocation limit for the zone. This revised approach is to take into account how the two resources interact in this catchment. Around 95% of consented allocation is from groundwater (over 2000 takes) versus 5% from surface water (around 75 takes). Groundwater abstraction has the main impact on groundwater levels and flows in the lowland streams.

13.348 Although there are no allocation limits for each stream or river, there may be immediate localised effects of surface water abstraction. These are managed by having a minimum flow and a restriction flow above the minimum flow when abstraction must be reduced then stop.

13.349 The Director General of Conservation seeks that the minimum flows in Tables 11(c) and 11(d) are implemented as soon as Variation 1 is operative.

13.350 Four further submissions were received from Horticulture NZ, Federated Farmers, Central Plains Water and Ellesmere Irrigation Society in opposition to the Director General of Conservation's request.

13.351 Central Plains Water requests that Table 11(c) is deleted or existing minimum flows are inserted against relevant water bodies until the Central Plains Water Irrigation Scheme is

developed and the effect on flows is observed. Fonterra and Dairy NZ similarly seek that the table is deleted and a new method inserted committing to the introduction of minimum flows and restrictions once increases in flow from Central Plains Water, MAR and TSA are evident.

13.352 Various submitters, including Fish and Game and Forest and Bird, seek further assessment of the limits in Tables 11(c) and 11(d). Horticulture NZ requests a review of the Table informed by the proposed National Objectives Framework. Irrigation NZ states a number of the proposed minimum flows contained in Tables 11(c) and 11 (d) are not sound as the science used to derive them is not technically robust and questions why some limits differ from those reached through the recent Selwyn-Rakaia consent review process. The submitter will provide an alternative table at the hearing.

13.353 Ellesmere Irrigation Society and Bowden Environmental seek separate tables for surface water and groundwater and that Tables 11(c) 11(d) and 11(g) be combined and expanded to include three components for each stream: a minimum flow; an allocation restriction above the minimum flow; and an allocation limit (all in L/s).

13.354 Other submitters request specific amendments to Table 11(c). One submitter seeks more investigation into flow levels as they consider the Halswell River flow is increasing. Another seeks confirmation that the flows for the LII and Selwyn Rivers provide for recreational values.

13.355 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks increases in the minimum flow for Hanmer Road Drain; Hororata River; Kaituna River; LII River; Selwyn River (Whitecliffs); and Silverstream.

13.356 Four further submissions were received with Selwyn District Council, Central Plains Water and Fonterra in opposition to the above amendment and Federated Farmers partly in support.

13.357 Ellesmere Irrigation Society seeks reductions for: Birdlings Brook (Leggs Rd and Locheads Rd sites); Boggy Creek; Harts Creek (Lower Lake Rd and Timberyard Rd); Irwell River (Lake Rd); Lee River; and Selwyn River (Coes Ford). The submitter seeks deletion of all references to: Hanmer Road Drain; unnamed drain at Prendegast Property; Irwell River (Leeston Christchurch Rd); Selwyn River (D/s Rennie Property) and Tent Burn stream.

13.358 Existing minimum flows have been set on a consent by consent basis, most between the 1970s and mid- 1990s. Many are below what is desirable to support ecological and cultural values.

13.359 The minimum flows in Table 11(c) and 11(d) are the Zone Committee's recommendations. With some modifications for a few water bodies, these are based on staff recommendations after consideration of the ecological flow requirements, the results a cultural flow preference (COMAR) study, an economic assessment and feedback from community

meetings with potentially affected parties. It is not recommended to amend the minimum flows in Tables 11(c) and 11(d).

13.360 Consideration is given to the whether the minimum flows should apply from the date Variation 1 becomes operative or some later date. Lowland streams would receive little benefit from increasing the minimum flows before alpine water is brought into the catchment (many streams are below current minimum flows for a large proportion of the irrigation season now). 2025 is considered an appropriate date, by which time an increase in stream base flows can be expected if the Central Plains Water Scheme is completed by 2018/19 as planned. This also provides about 5 years for on the ground changes including the retirement (non-use) of groundwater takes.

13.361 In response to submissions under Policy 11.4.28 it is proposed that the minimum flows are to be applied to all consents (existing and new) from 2025 and not specify that they apply on consent expiry as in the notified version of Variation 1. It is proposed to amend the last two columns in Table 11(c) and the last column in Table 11(d) to delete the words *"on consent expiry"* to reflect this amendment.

Recommendation R Table 11(c)

That the fifth and sixth column headings in Table 11(c) be amended to read:

River or stream (See Planning Maps)	Location of recorder site or site where flow is measured	Topo 50 Map Reference	Minimum Flows		Restriction Regime
			Minimum flow for A permits (L/s) Before 1 July 2025	Minimum flow for A permits (L/s) From 1 July 2025 ~~(on consent expiry)~~ [200]	Flow at which pro-rata restrictions start (L/s) From 1 July 2025 ~~(on consent expiry)~~ [201]

Recommendation R Table 11(d)

That the fifth column heading in Table 11(d) be amended to read:

River or stream (See Planning Maps)	Location of recorder site or site where flow is measured	Topo 50 Map Reference	Minimum flow for B permits (L/s) Before 1 July 2025	Minimum flow for B permits (L/s) From 1 July 2025 ~~(on consent expiry)~~ [202]
Kaituna River	Kaituna River at Kaituna Valley Road	BX24:74399-54998	As per existing minimum flow conditions on a	522

[200] Consequential amendment from Policy 11.4.28: V1pLWRP-690 Fish and Game Council North Canterbury
[201] Consequential amendment from Policy 11.4.28: V1pLWRP-690 Fish and Game Council North Canterbury
[202] Consequential amendment from Policy 11.4.28: V1pLWRP-690 Fish and Game Council North Canterbury

			resource consent	

11.7.2 Tables 11(e) 11(f) and 11(g)

13.362 Tables 11(e) 11(f) and 11(g) read

Table 11(e): Combined Surface Water and Groundwater Allocation Limits for Selwyn-Waimakariri, Rakaia-Selwyn, and Little Rakaia Combined Surface and Groundwater Allocation Zones

Allocation Zone (see Planning Maps)	*Allocation Limit (million m^3/year)*
Selwyn-Waimakariri	*193*
Rakaia-Selwyn	*180*
Little Rakaia	*85.9*

Table 11(f): Kaituna Groundwater Allocation Zone Limits

Allocation Zone (see Planning Maps)	*Allocation Limit (million m3/year)*
Kaituna	*2.1*

Table 11(g): Surface Water Allocation Limits

River or Stream (see Planning Maps)	*Allocation Limit For A Permits (L/s)*	*Allocation Limit For B Permits (L/s)*
Kaituna River	*44*	*131*
Prices Stream	*No abstraction*	*No abstraction*
Graylees	*No abstraction*	*No abstraction*
Turrells Drain	*No abstraction*	*No abstraction*

13.363 Section 11.7.2 contains the groundwater and surface water allocation limits for the catchment in Tables 11(e), 11(f) and 11(g).

13.364 There were three general submissions against 11.7.2 seeking amendments to the allocation limits with submitters stating there is no proof that there is no water available. Irrigation NZ seeks the deletion of Tables 11(e), 11(f) and 11(g) arguing that the science used is not robust. The submitter will provide an alternative table at the hearing.

Table 11(e)

13.365 Table 11(e) received 10 submissions and 17 further submissions, the majority in opposition to the limits.

13.366 Table 11(e) contains the allocation limits for the altered Little Rakaia, Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones. The adjustment to the Zone boundaries has been proposed to account for natural differences in the flow of water in the catchment, to provide a structure to facilitate allocation of water as a "combined resource" and to avoid the risk of further over-allocation.

13.367 The allocation limits for Rakaia-Selwyn and Selwyn Waimakariri zones are set using a method that determines the volume of water that can be abstracted whilst retaining acceptable low flows to protect ecological values in the streams at the bottom of the catchment (80% 7DMALF). The limits provide for an acceptable level of supply reliability for irrigation as they take into account the addition of alpine water to the catchment, a small volume of managed aquifer recharge in the winter months and targeted stream augmentation through shallow aquifer recharge near to lowland streams in the summer months.

13.368 The allocation limits for the Little Rakaia Zone are capped at the current consented allocation (sum of annual volumes on existing surface and groundwater consents). The method used to calculate allocation limits for the Rakaia-Selwyn and Selwyn-Waimakariri Zones is not used because of difficulties in modelling losses from the north branch of the Rakaia River in this area.

13.369 Capping allocation at current levels is considered appropriate as the present ecological health of the lowland streams and Muriwai/Coopers Lagoon in this area is generally good, reflecting higher groundwater levels buffered by low nutrient water lost from the Rakaia River. With capping allocation there is a risk that abstraction could increase (within consented limits) and that stream flows could decrease. The risk however is considered small since much of the area is under irrigation. The move to replace border-dyke with more efficient irrigation in this area may also reduce groundwater recharge.

13.370 Fish and Game and Forest and Bird request further assessment of the methodology and limits in Table 11(e) for their appropriateness in achieving the intent of Policy 11.4.21 (to improve flows in rivers and streams) .

13.371 Several further submissions were received from Dunsandel Groundwater Users Group, Horticulture NZ, TrustPower, Fonterra and Central Plains Water in opposition to the above submission.

13.372 Horticulture NZ seeks reconsideration of all limits tables informed by scientific review and the proposed National Objectives Framework.

13.373 Ellesmere Irrigation Society requests the tables be deleted and re-formatted to contain separate regimes for surface water and groundwater and not combined annual limits.

13.374 One submitter (NZ King Salmon) seeks that the limit for the Little Rakaia Zone is retained as it does not provide for additional allocation of water within the zone, thereby providing for lowland stream flows and protecting existing allocations.

13.375 The Director General of Conservation requests clarification that the limit for the Rakaia-Selwyn and Selwyn-Waimakariri Zones are actually targets under the NPSFM, and seeks a defined timeframe when the limits will be met to give effect to Policy B6 of the NPSFM.

13.376 This is accepted and consistent with the NPSFM definitions of a limit and target (a type of limit where a resource is over-allocated). It is difficult say when the limits will be met given the uncertainties described in relation to the submitter's points under Policy 11.4.21.

13.377 TrustPower seeks that the Little Rakaia Combined Surface and Groundwater Allocation Zone is deleted from Table 11(e) for the same reasons given in its submission on Rules 11.5.32, 11.4.34, 11.4.35 and 11.5.36; principally that the zone boundary and establishment of a combined allocation zone has the effect of creating an allocation regime for the Rakaia River that should properly be managed in Section 12 of the pLWRP and through the Rakaia River Water Conservation Order. In addition, Trustpower states that it has not seen material that details how the 85.9 Mm^3 / year allocation from the Little Rakaia has been calculated or what assumptions and surface and groundwater consents were included.

13.378 The submitter's concerns about establishing limits for the Rakaia River are addressed under Policy 11.4.21 and through proposed amendments to Rules 11.5.32 and 11.5.36 which seek to exclude takes from the Rakaia River. The limit was calculated using the sum of the allocated annual volumes from 267 groundwater wells in the zone at 28 January 2014 (85.1 million m^3 per year) plus annual volumes calculated for 4 surface water takes in the zone at 11 September 2012 (0.8 million m^3 per year). Surface water takes from the Rakaia River are not included within the limit for the Little Rakaia Zone. Nor are groundwater takes with a stream depletion effect on the Rakaia River counted against the WCO limit which only deals with surface takes.

13.379 Federated Farmers requests consideration of various alternatives including reinstatement of the limits from the NRRP and pLWRP for the Rakaia-Selwyn and Selwyn-Waimakariri Groundwater Allocation Zones with limits based on maintaining 50% 7DMALF in the lowland streams (this is presumably an error as NRRP limits were based on 50% of Land Surface Recharge) or more robust modelling of groundwater availability and allocation.

13.380 Adverse effects on stream flows are being observed with current levels of abstraction (estimated on average to be 50% of allocation). Although the current groundwater allocation limits are exceeded by approximately 35%, this would indicate that the existing limits based on 50% of land surface recharge may not be sustainable or support healthy lowland streams.

13.381 HydroServices requests that Table 11(e) is amended to create a separate groundwater allocation zone for Kaitorete Spit or create a new rule to allow new takes from this area to be considered on their merits even when the allocation limit for the Selwyn Waimakariri Combined Surface and Groundwater Allocation Zone have been exceeded.

13.382 Based on technical advice provided in response to the submitter's request (Appendix D) it is not proposed to provide for new takes from Kaitorete Spit or create a separate allocation zone.

Table 11(f)

13.383 Table 11(f) received five submissions and five further submissions. The submissions from Ellesmere Irrigation Society, Forest and Bird and Horticulture NZ are the same as the submissions against Table 11(e).

13.384 Table 11(f) contains the allocation limits for a new Kaituna Groundwater Allocation Zone. The Zone boundary follows the watershed boundary that surrounds the four Banks Peninsula surface water catchments in Table 11(e). This area is separately defined for groundwater allocation because it is hydraulically isolated from the groundwater system underlying the rest of the catchment. The method used to set combined surface and groundwater allocation limits is not considered appropriate in this area because surface water and groundwater in the deep volcanic aquifer are less well connected.

13.385 There are very few groundwater takes in this area (5 consents) and most source water from the deep volcanic aquifer. As stream flows are not likely to be impacted by deeper groundwater takes, the allocation limit proposed is 2.1 million m^3/year which is the sum of current allocation plus 10% to allow for additional abstraction.

13.386 G Miller and HydroServices seek that the Kaituna Groundwater Allocation Zone and limits be extended to include McQueens and Gebbies Valleys.

13.387 Based on technical advice provided in response to the submitters' request (Appendix D) it is not proposed to incorporate McQueens and Gebbies Valleys within the Kaituna Groundwater Allocation Zone.

Table 11(g)

13.388 Table 11(g) received six submissions and 9 further submissions. The submissions from Bowden Environmental, Ellesmere Irrigation Society, Forest and Bird and Horticulture NZ are the same as those against Table 11(e).

13.389 Table 11(g) contains surface water allocation limits for the surface water allocation zones that fall within the boundary of the Kaituna Groundwater Allocation Zone. The Kaituna River and Prices Stream are the main surface water bodies with flow all year round. Both exhibit good water quality and high ecological values and are valued for mahinga kai and sustaining

native species including tuna, inanga, kokopu, koaro and kanakana. The Kaituna Valley is part of the restoration programme under Whakaora Te Waihora.

13.390 The recommended allocation limits for the Kaituna River are considered to be protective of freshwater habitat and frequency of 'flushing flows' that are important for maintaining water quality, and closely reflect the status quo. There are no consented surface water takes from Prices Stream and it is proposed that takes be prohibited to protect the ecological and cultural values.

13.391 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks that Table 11(g) be amended to include a surface water allocation for all waterways that is based upon either the amount of water able to be taken between the minimum flow and when pro-rata restrictions start as per Table 11(c) or 30% of the 7DMALF, whichever is the lesser. The submitter states the only expectation is for Waikekewai Creek and Taumutu Creek where an allocation limit of '0' is set.

13.392 It is unclear whether the submitter is seeing surface water allocation limits for all waterways in the catchment including Table 11(c) or only those in Table 11(g), and precisely what the allocation limit should be. It is suggested that the submitter may wish to bring information to the hearing to assist in clarifying what it is seeking.

Recommendation R Table 11(e)

That the second column in Table 11(e) be amended to read:

Allocation Zone (see Planning Maps)	Allocation Limits and Targets[203] (million m^3/year)
Selwyn-Waimakariri	193
Rakaia-Selwyn	180
Little Rakaia	85.9

Recommendation R Table 11(f)

That Table 11(f) be retained as notified.

Recommendation R Table 11(g)

That Table 11(g) be retained as notified.

MAPS – INDEX, SW-05, SW-10, SW-12, and SW-13

[203] V1pLWRP-248 Director General of Conservation

13.393 The Map Index and Maps SW-01 to SW-13 are new.

13.394 The Map Index and Map SW-05 each received one submission. Maps SW-10, SW-12 and SW-13 each received one submission and one further submission.

13.395 HydroServices requests that the MAP Index and Map SW-05, SW-12 and SW-13 be amended to:

- Delineate a Kaitorete Spit Groundwater Allocation Zone
- Delineate Groundwater Allocation Zones for Banks Peninsula Valleys

13.396 G Miller requests that Map SW-10 be amended to incorporate McQueens and Gebbies Valleys into the Kaituna Groundwater Allocation Zone with the new boundary being the old course of the Halswell River.

13.397 Based on expert technical advice received in response to the submitter's request it is not recommended to create a separate Groundwater Allocation Zone for Kaitorete Spit or allow for further takes in this area when the allocation limit is exceeded for the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone, which it is currently.

13.398 The advice notes that there is geological continuity between the strata beneath Kaitorete Spit and the landward strata underlying the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone. It is considered that allowing further allocation from Kaitorete Spit would reduce groundwater pressures up-gradient which would have effects on flows in the spring-fed streams (See Appendix D).

13.399 The plan proposes that four valley catchments that flow into Te Waihora form the Kaituna Groundwater Allocation Zone because the hydrological character of these valleys and their aquifer components contrast with the character of the gravel-dominated aquifer system of the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone.

13.400 Based on expert technical advice, it is not recommended to include McQueens and Gebbies Valleys within the Kaituna Groundwater Allocation Zone because Gebbies Valley and McQueens Valley are directly connected to the parent Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone. The reasons are provided in the supporting technical report *"Integrated surface water and groundwater management – preferred approach. Selwyn Waihora sub-regional section of the proposed Land and Water Regional Plan" (Report R14/9)* and further expanded upon in response to the submitter's request in Appendix D.

Recommendation - Maps

That the Maps: Index; SW-05; SW-10; SW-12; and SW-13 be retained as notified.

14 Water Permit Transfers

Policy 11.4.22

14.1 Policy 11.4.22 reads:

> *11.4.22 Restrict the transfer of water permits within the Rakaia-Selwyn and Selwyn-Waimakariri water allocation zones to minimise the cumulative effects on flows in hill-fed lowland and spring-fed plains rivers from the use of allocated but unused water, by requiring that:*
>
> *(a) Irrigation scheme shareholders within the Irrigation Scheme Area shown on the Planning Maps do not transfer their permits to take and use groundwater; and*
>
> *(b) No permit to take and use groundwater is transferred from down-plains to up-plains; and*
>
> *(c) In all other cases 50% of any transferred water is surrendered.*

14.2 Policy 11.4.22 received 34 submissions and 64 further submissions. Five submitters request that the policy is retained, four submitters request that the policy is deleted, and most submitters request significant amendments.

14.3 Policy 11.4.22 restricts the transfer of water permits in water allocation zones where the combined allocation of groundwater and surface water exceed the allocation limit. The purpose of the policy is to help address over-allocation and achieve the Zone Committee outcome of healthy lowland streams. The NPSFM requires regional councils to phase out over-allocation and state criteria for transfers of water permits. The RPS also identifies methods and timeframes for reducing over-allocation need to be set in Policy 7.3.4(2).

14.4 Critical to improving low flows in the rivers and streams is that groundwater takes within the Central Plains Water command area switch to surface water provided by the Irrigation Scheme. This will leave groundwater in the aquifer system to support base flows in the spring-fed streams. There would be very little improvement in low flows if (no longer required) groundwater permits were transferred and the water continued to be abstracted. Central Plains Water shareholders are therefore prohibited from transferring their groundwater consents. Water users who are not Central Plains Water shareholders are required to surrender 50 percent of any transferred water.

14.5 Prohibiting transfers of groundwater from down-plains (below SH1) to up-plains (above SH1) is intended to reduce the long-term cumulative effects of up-plains groundwater abstractions on base flows in the lowland streams.

14.6 It is helpful to consider the submissions on the policy generally and also each clause separately.

General comments

14.7 The Director General of Conservation, Ellesmere Irrigation Society, Fish and Game, Forest and Bird and the Malvern Hills Protection Society all support the retention of Policy 11.4.22.

14.8 The Director General of Conservation considers that the policy avoids re-allocation of the water resource where it is over-allocated. Ellesmere Irrigation Society considers the policy will address concerns that the trading of water from lowland to inland areas may increase adverse effects on lowland streams. The Malvern Hills Protection Society considers that transfers should not be permitted in red [over-allocated] zones and water that is not used should be used to replenish depleted aquifers, springs, rivers and streams.

14.9 However, the majority of submitters oppose the prohibition on Central Plains Water shareholders transferring groundwater consents and the requirement for other water users to surrender 50% of any transferred water in the over-allocated Rakaia-Selwyn and Selwyn-Waimakariri zones.

14.10 F & R Lamborn request that Policy 11.4.22 is amended to allow transfer of water permits without restriction. The submission is supported in part through further submissions from Horticulture NZ, Dairy Holdings, ANZCO & CMP and Central Plains Water.

14.11 J Townsend seeks that the policy is deleted on the basis that the effects on the environment are minor. Bowden Environmental states that the delineation of the area into up-plains and down-plains does not make hydrogeological sense and that the policy restricting transfers would not be needed if the submitter's proposal for a 'dynamic' groundwater allocation regime was implemented.

14.12 M Bruce opposes the entire policy and considers that the 50% surrender requirement will impact significantly on livelihoods. Waitikiri Gardens seeks that the policy is moderated as the restrictions will prevent the best and highest value use of the land and make crop rotation and the use of fresh ground difficult.

14.13 F Luporini requests actions from CRC prior to imposing further restrictions on transfers. These include correcting errors in the consents database, a review of water permits to apply a reasonable annual volume, a further review after at least 10 years of water use records, and monitoring the positive effects of the Central Plains Water on groundwater takes.

Policy text

14.14 HydroTrader requests that Policy 11.4.22 is amended to 'manage' instead of 'restrict' the transfer of water permits and that clauses (a), (b) and (c) are deleted and replaced with the words *"appropriate conditions are imposed to avoid increases in water usage that will have an adverse effect (cumulatively or otherwise) on flows in hill-fed lowland and spring-fed plains rivers."*

14.15 Central Plains Water and Dairy Holdings request the term 'manage' is used in place of 'restrict' and that the wording is amended to ensure it only applies to transfers from 'site to site' and does not apply to transfers on change of property ownership.

14.16 Nga Rūnanga and Te Rūnanga o Ngāi Tahu propose a replacement policy on transfers as follows:

"Enable the transfer of water provided the transfer does not:

(a) Result in more water physically being abstracted from either the groundwater or surface water resource (i.e. one has to demonstrate that the water being transferred has been physically used in the past); and

(b) Result in the groundwater being transferred from 'downs - plains' to 'up - plains' as shown on the Planning Maps; or

(c) Result in the transfer of surface or groundwater permits from a person who holds irrigation scheme shares to a person who either does not hold irrigation scheme shares or holds irrigation scheme shares in a different irrigation scheme; or

(d) Result in the transfer of a surface water permit from one surface waterway to another surface waterway unless the two surface waterways are physically connected; or

(e) Result in the reduction in the reliability of supply to any ground and surface water permit holder, unless that permit holder has provided their written permission."

14.17 Four further submissions were received from Federated Farmers, Fonterra, Ellesmere Irrigation Society and ANZCO & CMP opposing the submission and the above amendments proposed by Nga Rūnanga and Te Rūnanga o Ngāi Tahu.

11.4.22(a) Central Plains Water shareholders cannot transfer groundwater consents

14.18 Many submitters including HydroTrader, Dunsandel Groundwater Users Group, P & A Jarman, Erralyn Farm and Krysette Ltd and Synlait Farms and Synlait Milk request that this clause is deleted.

14.19 Dunsandel Groundwater Users Group opposes prohibiting Central Plains Water shareholders from surrendering their groundwater resource consents because this is considered to be inequitable between those who are shareholders and those who are not (who can still transfer water albeit with a requirement to surrender 50%). The submitter contends that consent holders who are also Central Plains Water shareholders will have made a substantial investment twice – first in respect of obtaining their existing consent and infrastructure then again in subscribing to Central Plains Water. Preventing shareholders from transferring valuable groundwater consents means they will not be entitled to any recompense for past investment. The submitter considers that this restriction will also deter rather than encourage a switch from groundwater to Irrigation Scheme water. The submitter requests an addition to Policy 11.4.22 to allow the full transfer of water from one parcel of land to another where both parcels are owned by the consent holder or related entity.

14.20 Central Plains Water considers the policy unjustified and that it unfairly penalises the Scheme and its members. The submitter considers that the policy will be a disincentive for farmers joining Central Plains Water, particularly if transfers within the same property (or between properties owned or operated by the same person) are not able to occur. Preventing such transfers increases the risk that farmers will choose to stay with their existing groundwater takes rather than being supplied by Central Plains Water. This in turn will reduce the amount of alpine water entering the catchment and consequent benefits.

14.21 Central Plains Water also highlights that the policy anticipates a property will be fully irrigated with water supplied by Central Plains Water upon joining the scheme whereas in many instances, this will not be the case. A shareholder may only seek to irrigate part of their property (or only 'top-up' existing groundwater takes) in which case the submitter suggests there will be circumstances where groundwater transfers should legitimately and reasonably be able to occur.

14.22 Central Plains Water also anticipates that it may need to use groundwater as 'stored water' for occasional provision of supplementary supply. The submitter therefore seeks that there is no penalty for the surrender of an existing groundwater consent to the Irrigation Scheme.

14.23 Dairy Holdings holds a large number of groundwater consents, receives water from the Rakaia River (directly or via irrigation schemes) and is a shareholder in Central Plains Water. The submitter requests the same amendments as Central Plains Water and raises similar issues. In addition the submitter states that Policy 11.4.22 reduces the opportunities for farmers to more efficiently use their water resources when joining the Central Plains Scheme. It seeks to be able to transfer groundwater (to top up reliability) to related entities or third parties that have poorer reliability surface water takes (this includes members of Central Plains Water who decide not to receive stored water provided under the TrustPower arrangements). The submitter states that the policy is also unclear in its application where Dairy Holdings continues to also use other surface water and some (but not) all groundwater to top-up reliability.

14.24 Both Dairy Holdings and Central Plains Water seek the following amendments to clause (a):

"(a) For land irrigated by an Irrigation ~~s~~Scheme, ~~within the Irrigation Scheme Area shown on the Planning Maps,~~ any groundwater consents applying to that land ~~do not~~ can be transferred ~~their permits to take and use groundwater~~ to:

(i) the Irrigation Scheme; or

(ii) to another Property owned by the same person or a related entity (as that term is defined in section 2(3) of the Companies Act 1993)"

14.25 Three further submissions were received from Horticulture NZ, The Crossing and ANZCO & CMP in support of the above and other amendments proposed by Central Plains Water.

14.26 Erralyn Farm and Krysette Ltd states that transfers are not always sought to facilitate an increase in irrigation but also to improve reliability for a particular property and that the provisions in Variation 1 prevent the ability of permit holders to provide for their social and

economic well-being. The submitter therefore seeks that clause (a) is deleted or amended to allow the transfer of groundwater permits held by irrigation scheme shareholders to other sites within the Irrigation Scheme Area. As an alternative, Erralyn Farm and Krysette Ltd proposes an additional clause to enable the transfer of groundwater within the Rakaia-Selwyn and Selwyn-Waimakariri allocation zones without surrender if the permit transferred is intended to replace an existing consent; and (a) no more water is transferred than that authorised for extraction pursuant the existing consent; and (b) the existing consent is surrendered on completion of a successful transfer.

14.27 McKavanagh Holdings Ltd requests that clause (a) is amended to allow irrigation scheme shareholders to transfer their existing groundwater consents within their farm enterprise to make the most cost effective use of groundwater and irrigation scheme surface water.

14.28 Irrigation NZ agrees with the need to prevent existing irrigators that are Central Plains Water shareholders from transferring their groundwater consents to other parties, otherwise an over-allocation will likely remain in the zone. However, the submitter seeks that clause (a) is amended to provide for the transfer of existing consents to dryland blocks within a farming enterprise that plans to use Central Plains Water on their existing irrigated land. To facilitate this Irrigation NZ also seeks a new definition of "Farming Enterprise" for Selwyn Te Waihora so that it covers multiple discrete parcels of land not only contiguous parcels, as Irrigation NZ interprets the current definition.

14.29 The submitter gives two reasons. First, a number of shareholders have bought into Central Plains Water to irrigate additional dry land within their current farming enterprises. To do this in a cost effective manner (e.g. distribution infrastructure and design considerations) some shareholders need to be able to transfer existing water allocation consents to dryland blocks within their farming enterprise and use Central Plains Water Scheme water on their existing irrigated land. Secondly, until a water storage option is available to increase reliability of supply to over 90 percent that groundwater takes are able to be maintained by existing Central Plains Water irrigators to deal with potential reliability issues from the Irrigation Scheme's surface water supply.

14.30 It is acknowledged that Policy 11.4.22 will impact Central Plains Water shareholders who wish to transfer their groundwater consents. However, this is a consequence of the Rakaia-Selwyn and Selwyn-Waimakariri zones being over allocated and the requirement to reduce groundwater abstraction.

14.31 It could also be argued that Central Plains Water shareholders are in a beneficial position having access to additional water that those outside the scheme do not. Furthermore, shareholders are not compelled to surrender their groundwater consents. When consents are renewed, allocation of groundwater will be reassessed taking into account water supplied by Central Plains Water and records of water use.

14.32 Several submitters seek exceptions to the restrictions on water permit transfers including between Central Plains Water shareholders and the Scheme, between properties owned by

the same person or a related entity (as defined under the Companies Act 1993), and between non-contiguous parcels of land under a new definition of Farming Enterprise.

14.33 Whilst this would enable efficient use of allocated water, the exceptions are not supported whilst allocation in the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface and Groundwater Zones exceed the limits. The solution for the catchment requires that groundwater is not used and that it stays within the groundwater system. If transfers are allowed, groundwater will continue to be abstracted. There is also potential for an increase in abstraction if entitlements that have not been exercised (paper water) are transferred and implemented. Water permits are also granted for a particular use in a particular location and not on the basis that water is transferred to another site for another activity.

11.4.22(b) No transfer of groundwater from down-plains to up-plains

14.34 Many submitters request that clause (b) be deleted. In most cases this is part of the submitter's request to delete Policy 11.4.22 in its entirety. Only a few make specific comment on clause (b).

14.35 Dunsandel Groundwater Users Group notes that while Policy 11.4.22 prevents the transfer of groundwater from down-plains to up-plains it is not specific about the transfer of groundwater down-plains. The submitter requests an additional clause that allows the full transfer of groundwater down-plains if it is replacing a surface water take that has been transferred up-plains and to an irrigation scheme, as this will assist in achieving the environmental objectives of the Plan.

14.36 Synlait Farms and Synlait Milk state that clause (b) appears to be contrary to Policy 11.4.21 in which surface and groundwater are managed as one resource and questions its purpose. Irrigation NZ states that clause (b) is nonsensical and should be deleted.

14.37 The distinction between up-plains and down-plains was in part proposed to facilitate the more efficient use of surface water, such as that from the Central Plains Water Scheme, in the upper plains while maintaining groundwater as the dominant source in the down-plains area.

14.38 However, after analysis, it is recommended to remove the distinction between up-plains and down-plains. The distinction is unnecessary as Central Plains Water shareholders are not able to transfer their groundwater consents and other users are required to surrender 50% of any transferred water so the adverse effects will be reduced. In addition, establishing a separate Little Rakaia Combined Surface and Groundwater Allocation Zone addresses the issue of groundwater entitlements being transferred from the 'water rich' riparian area adjacent to Rakaia River inland and up-plains, where groundwater is over-allocated.

11.4.22(c) Requirement to surrender 50% of any transferred water (users who are not Central Plains Water shareholders)

14.39 Many submitters including ANZCO & CMP, The Canterbury Farming Company, Canterbury Aggregate Producers, Central Plains Water, Dairy Holdings, Federated Farmers, Irrigation NZ, and Lake Ellesmere Dairy Farmers Group specifically request that clause (c) is deleted.

14.40 Reasons given include that it discourages the transfer of water and the associated benefits of putting water to more efficient and higher value uses. Some state 50% surrender is arbitrary with no technical justification and other submitters consider it to be inequitable, inefficient and a crude method of reducing over-allocation.

14.41 Irrigation NZ states that technical evidence will be provided at the hearing that will demonstrate, with the increased recharge from new irrigated land combined with the introduction of alpine water to replace groundwater takes, that no further reduction in allocation is required and as a consequence clauses (b) and (c) serve no purpose and should be deleted.

14.42 HydroTrader argues that the CRC does not have the legal power to impose a condition requiring the surrender of part of an existing allocation on transfer or to make the transfer of water a prohibited activity, including when such a condition is breached.

14.43 Erralyn Farm and Krysette Ltd and Dunsandel Groundwater Users Group request the percentage of water to be surrendered is reduced to 25% and that the activity status is 'discretionary' to provide flexibility and allow the merits of individual cases to be considered where less than 25% is surrendered.

14.44 Dairy NZ and Fonterra consider 50% surrender to be arbitrary and too rigid to deal with variable circumstances and that it will not assist in sharing and claw back of water. The submitters request that (c) is amended to read *"in all other cases 50% of any transferred water is surrendered, unless a lesser amount is justified in the individual circumstances of the case"*.

14.45 Four further submissions were received with Forest and Bird opposed to the above amendment and ANZCO & CMP, Horticulture NZ and Federated Farmers either supporting or opposing the amendment in part.

14.46 Synlait Farms requests that clause (c) is amended so the surrender volumes are considered in light of efficient irrigation.

14.47 Federated Farmers considers that the blanket 50% surrender of water when transferring water permits is contrary to the CRC decision on the pLWRP. The submitter also considers this an unreliable way to reduce over-allocation as it is dependent on water being transferred. An alternative is proposed - only water that a permit holder can demonstrate they have used can be transferred and only to the portion of the permit which is the A allocation (as per amendments sought by Federated Farmers in relation to water allocation in which water permits have an A allocation and a B allocation)

14.48 Selwyn DC seeks that 11.4.22(c) is amended to exclude takes for community water supply: *"(c) In all other cases other than in relation to a community water supply 50% of any transferred water is surrendered".*

14.49 The Crossing requests that the policy is amended such that it does not apply to transfers of surface water takes.

14.50 The selection of 50% surrender is intended to be a disincentive to the transfer of water without prohibiting transfers entirely. The main objective is to avoid the transfer of surplus water – in other words avoiding 'paper water' being converted to 'wet water'.

14.51 There are a number of reasons why some consent holders may not use all their allocated volume including rainfall, climate and land use. Even so, various studies and water use data[204] [205] [206] indicate that on average around 50% of consented allocation is actually used. This suggests some (not all) users have more water that they need[207], even taking into account that water is allocated to meet demand in dry years.

14.52 The Federated Farmers proposal that only water that is allocated for an average rainfall year and has been used in the previous 5 years can be transferred has appeal, although not at this point in time. A pre-requisite is that there is 5 years water metering data available, which is generally not presently the case. The separation of annual volumes into an A block (quantum of water likely to be used in an average rainfall year which can be transferred) and a B block (additional water required to ensure reliability in 9 years out of 10 and cannot be transferred) has potential to be complicated and may require all consents to be reviewed.

14.53 Because Variation 1 proposes managing and allocating surface and groundwater as one resource the transfer restrictions should also apply to surface water takes. It is agreed that transfer restrictions should not apply to water takes for community supply as these have a higher priority under the CWMS and pLWRP.

14.54 The submission that the Council does not have the legal ability to require part surrender of an existing allocation and prohibit transfers is considered in the legal section of this Section 42A Report. It is also addressed in the pLWRP decision.

Recommendation R 11.4.22

That Policy 11.4.22 is amended to read:

[204] Canterbury Region Water Use Reports for the 2010/11, 2011/12 and 2012/13 Water Years (Environment Canterbury Reports R012/19, R012/105 and R14/4)
[205] Modelling of stream discharge and groundwater levels in the Te Waihora / Lake Ellesmere catchment (Williams H R 2011)
[206] Memorandum on review of water use reports for the Canterbury Region (Williams H R 2011)
[207] Section 32 Evaluation Report (Section 11.4 Meeting the Allocation Limits)

11.4.22 Restrict the transfer of water permits within the Rakaia-Selwyn and Selwyn-Waimakariri water allocation zones to minimise the cumulative effects on flows in hill-fed lowland and spring-fed plains rivers from the use of allocated but unused water, by requiring that:

(a) Irrigation scheme shareholders within the Irrigation Scheme Area shown on the Planning Maps do not transfer their permits to take and use groundwater; and

~~(b) No permit to take and use groundwater is transferred from down-plains to up-plains; and~~[208]

~~(c)~~ (b) In all other cases, except in relation to a community water supply,[209] *50% of any transferred water is surrendered.*

Policy 11.4.24

14.55 Policy 11.4.24 reads:

11.4.24 Any replacement resource consent to take and use water for irrigation shall not include any water that has been transferred to another site and not used by the consent holder.

14.56 Policy 11.4.24 received nine submissions and four further submissions.

14.57 Policy 11.4.24 is intended to ensure that a consent holder receives a volume of water that takes account of their past use and needs but does not include surplus water they may have previously held and temporarily transferred but not used themselves.

14.58 Three submitters (Director General of Conservation, Fish and Game and Forest and Bird) request that the policy is retained.

14.59 Four submitters request that it is deleted. J Townsend requests that the policy is deleted on the basis that it does not take account of the consent holder's situation. The submitter states that consent holders need to be able to keep their consent and use it when they desire and if they choose to surrender all or part of the consent this should be at their discretion.

14.60 McKavanagh Holdings Ltd requests that Policy 11.4.24 is deleted or alternatively, allow transfer of consents between sites and between consent holders in the same catchment area through a permit trading scheme or similar process.

14.61 Synlait Farms and Synlait Milk question why temporarily or permanently transferred water cannot be renewed and seeks that the policy is deleted.

14.62 Nga Rūnanga and Te Rūnanga o Ngāi Tahu do not specifically state their position on Policy 11.4.24, though no similar policy appears in the suite of policies they propose to replace Policies 11.4.21 to 11.4.32 in Variation 1.

[208] V1pLWRP-327 - Dunsandel Groundwater Users Group; V1plWRP-1061 - Irrigation NZ; V1pLWRP-1169 - Synlait Farms

[209] V1pLWRP-589 - Selwyn DC

14.63 Deletion of the policy is not supported. The policy reduces the risk that more water is physically abstracted. Existing water permits are granted for a specific activity and irrigation of a specific area of land. They are not granted on the basis that water would be transferred to another site for another activity. A site to site transfer (whether partial or full) is an application for a new consent and by making the application the consent holder is effectively stating they no longer require the volume of water or to continue the activity that was originally authorised.

Recommendation R 11.4.24

That Policy 11.4.24 is retained without amendment.

Policy 11.4.25

14.64 Policy 11.4.25 reads:

11.4.25 Prior to the transfer of any existing resource consent to take and use water for irrigation to another site, if no annual volume has been applied to the resource consent, then an annual volume shall be applied in accordance with method 1 in Schedule 10.

14.65 Policy 11.4.25 received nine submissions and 6 further submissions.

14.66 Policy 11.4.25 ensures that where a consent holder intends to transfer water, but there is no annual volume on the donor consent, that an annual volume is applied prior to the transfer and that this is calculated in accordance with method 1 in Schedule 10. Method 1 takes into account records of actual water use. The purpose is to reduce the risk that surplus (unused) allocated water is transferred which may lead to a physical increase in abstraction.

14.67 Three submitters (Director General of Conservation, Fish and Game, and Forest and Bird) request that the Policy is retained. Five submitters request that the policy is amended.

14.68 Nga Rūnanga and Te Rūnanga o Ngāi Tahu do not specifically state their position on Policy 11.4.25, though the suite of policies proposed to replace Policies 11.4.21 to 11.4.32 in Variation 1 includes a policy (Policy 13) that would determine 'reasonable use' based on three options, one of which is different for permit holders who are irrigation scheme shareholders and permit holders who are not irrigation scheme shareholders.

14.69 The two options that are the same for both categories of water permit holders are: an allocation based on the demonstrated rate and volume of use; and that based on the implementation of the most efficient and effective irrigation practices for a soil type. The third option is an annual volume to meet demand in 8.5 out of 10 years for irrigation scheme shareholders and Schedule 10 (in its entirety) for everyone else.

14.70 Horticulture NZ requests that Policy 11.4.25 is retained but amended to ensure Method 1 is based on a 9 out of 10 year reliability and that this is the reliability factor for the catchment.

14.71 Dunsandel Groundwater Users Group requests that the policy is amended to delete reference to Method 1 and allow Schedule 10 in its entirety to be used to determine consented volumes. The submitter also requests that Method 1 is amended so that reliability is based on 9 out of 10 year reliability.

14.72 Erralyn Farm and Krysette Ltd seeks that Schedule 10 be able to be used in its entirety. The submitter comments that there is no reason to eliminate Methods 2 and 3 of Schedule 10 as a means of deriving reasonable volumes for existing consents, and considers that the economic consequence of moving from 9 to 8.5 out of 10 year reliability cannot be justified by the environmental outcomes and is contrary to the CRPS.

14.73 Irrigation NZ seeks that Method 1 is replaced with Method 2 in Schedule 10 which it considers to be the applicable methodology for determining 'reasonable use' prior to the transfer of an existing resource consent when no seasonal volume has been applied to the resource consent.

14.74 This position is not supported. It seems reasonable, that where the resource consent has no annual volume, records of actual use are taken into account in applying an annual volume to the donor consent prior to transfer. This is on the basis that where a consent holder has not been using the water they were allocated, any surplus should remain in the environment. This is particularly justified in over-allocated zones, where the transfer of surplus (unused) water could result in an actual increase in the volume of water abstracted.

14.75 The question of 8.5 versus 9 out of 10 year reliability is addressed in the discussion on proposed changes to Schedule 10.

Recommendation R 11.4.25

That Policy 11.4.25 is retained without amendment.

Rules 11.5.37 11.5.38 and 11.5.39

14.76 Rules 11.5.37, 11.5.38 and 11.5.39 collectively govern water permit transfers.

14.77 Rule 11.5.37 reads:

11.5.37 The temporary or permanent transfer, in whole or in part, (other than to the new owner of the site to which the take and use of water relates and where the location of the take and use of water does not change) of a water permit to take or use surface water or groundwater within the Selwyn Waihora catchment, is a restricted discretionary activity, provided the following conditions are met:

18.1 The reliability of supply for any other lawfully established water take is not reduced; and

18.2 In the case of surface water, the point of take remains within the same surface water catchment and the take complies with the minimum flow and restriction regime in Tables 11(c) and 11(d); or

18.3 In the case of groundwater:

(a) the point of take is within the same groundwater allocation zone or combined surface and groundwater allocation zone; and

(b) the bore interference effects as set out in Schedule 12 are acceptable; and

(c) the transfer is not from down-plains to up-plains; and

(d) the transfer is not from a person who holds shares in an Irrigation Scheme in the Irrigation Scheme Area as shown on the Planning Maps; and

(e) In addition for stream depleting groundwater takes:

(i) the transfer is within the same surface water catchment; and

(ii) the take complies with the minimum flow and restriction regime in Table 11(c) and 11(d);

(iii) And

(iv) the stream depletion effect is no greater in the transferred location than in the original location; and

18.4 If the transfer is within the Rakaia-Selwyn or Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones 50% of the volume of transferred water is to be surrendered.

The exercise of discretion is restricted to the following matters:

1. The nature of the transfer, whether short term, long term, partial or full, and the apportioning of the maximum rate of take and annual volume in the case of a partial transfer; and

2. The appropriateness of conditions, including conditions on minimum flow, annual volume and other restrictions to mitigate effects; and

3. The reasonable need for the quantities of water sought, the intended use of the water and the ability of the applicant to abstract and use those quantities; and

4. The efficiency of the exercise of the resource consent; and

5. The reduction in the rate of take in times of low flow; and

6. The method of preventing fish from entering any water intake.

Rule 11.5.37

14.78 Rule 11.5.37 received 41 submissions and 45 further submissions with the majority in opposition or requesting substantial amendments.

14.79 Most submitters request changes to reflect points made in their submissions on Policy 11.4.22. These are not repeated in full here.

14.80 One submitter requests that the rule is retained. Three submitters appear to request that the rule is deleted and 17 submitters request amendments to or deletion of particular conditions.

14.81 There are two submissions that broadly support Rule 11.5.37. J Snoyink requests that the rule is retained. Nga Rūnanga and Te Rūnanga o Ngāi Tahu supports the intent of Rule 11.5.37 but seeks amendments to condition 2 (transfer of surface water), such that it is broken down into two sub-conditions plus a new sub-condition to ensure surface water transfers do not impact reliability of supply for downstream users:

"(a) The point of take remains within the same surface water catchment; and

(b) The take complies with the minimum flow, flow restrictions and allocation regime in Tables 11(c), 11(d) and 11(g) and;

(c) The take does not result in a reduction in the reliability of supply to any other lawfully established surface water permit holder, unless that permit holder has provided their written approval; and"

14.82 Nga Rūnanga and Te Rūnanga o Ngāi Tahu supports not allowing the transfer of water "outside" irrigation schemes but considers that there are merits in allowing the transfer of water within the bounds of an irrigation scheme. The submitter proposes that condition 3(d) (groundwater transfers) reads:

"3(d) The transfer is not from a person who holds shares in an irrigation scheme to a person who either does not hold irrigation scheme shares or irrigation scheme shares in a different irrigation scheme; and."

14.83 Nga Rūnanga and Te Rūnanga o Ngāi Tahu requests a new condition is added to Rule 11.5.37 so that only water that has physically been used should be able to be transferred – "*In the case of a partial transfer, the combined rate and volume of water being transferred and kept reflects that which can be demonstrated has been used in the past*."

14.84 The requested amendment to condition 2 is not necessary as condition 1 applies to both surface and groundwater. It is not common practice to have a rule where the activity status changes dependent on whether a third party gives written approval. For consistency it is also desirable to adopt the text of the equivalent region-wide rules in the pLWRP.

14.85 The requested amendment to condition 3(d) to enable transfer of groundwater permits between persons within an irrigation scheme is not supported for the reasons provided in relation to Policy 11.4.22, namely that allocated groundwater will continue to be abstracted and the expected benefits to the lowland streams will be reduced.

14.86 The majority of submitters oppose Rule 11.5.37 and request substantive changes to reflect their submission points in respect of Policy 11.4.22.

14.87 Two submitters request that Rule 11.5.37 is not implemented until a review of consented annual volumes in Council's database has been carried out and errors corrected and not before the results of lower groundwater uptake from implementation of Central Plain Water Scheme are known and have been evaluated.

14.88 Three submitters request that transfer rules are deleted and water permit transfers are allowed without restrictions. Two submitters propose a less favoured alternative which is that the policy has a start date after a reasonable time and water metering data is obtained.

14.89 Two submitters request changes to the main text of the rule. Ellesmere Irrigation Society and Bowden Environmental seek that this is changed to new owners of the "*same property*", rather than the "*same site*" and that the words "*where the location of the take and use of water does not change*" are deleted as they do not provide for moving the point of take, for example due to a damaged bore.

14.90 Replacing the term "site" with "property" and deletion of the requirement that the location of the take remains the same would be inconsistent with region-wide Rule 5.133 of the pLWRP and the terminology in s136(2)(a) of the RMA.

Surface water (11.5.37(2))

14.91 Ellesmere Irrigation Society Inc and Bowden Environmental request amendments to reflect the submitters' position that groundwater and surface water allocation limits are separate and that minimum flows, allocation (as a rate of take) and restriction flows are contained in a single table.

14.92 Allocating surface and groundwater as a combined resource in three zones is a fundamental change from the approach in the NRRP and pLWRP in which surface and groundwater are managed as separate entities. The change in approach is at the heart of Variation 1 for water quantity and the rationale is described in the report 'Integrated Surface Water and Groundwater Management – Preferred Approach'[210] and the Section 32 Evaluation Report[211].

Groundwater (11.5.37(3))

14.93 A number of submitters strongly oppose condition 3, in particular the restriction on Central Plains Water shareholders transferring their groundwater consents.

14.94 HydroTrader requests that condition 3 is deleted or, as a less preferred option, make non-compliance with Rule 11.5.37 a discretionary activity not a prohibited activity. The submitter contends that the CRC lacks the power to require the surrender of part of an existing allocation on transfer and lacks the power to make the transfer of water a prohibited activity, including when such a condition is breached.

14.95 The question of whether CRC has the power to require surrender of part of an existing allocation is addressed in the legal analysis section of this Section 42A Report.

[210] Integrated Surface Water and Groundwater Management – Preferred Approach (Elemental Geoconsulting Technical Report E14/01)
[211] Proposed Variation 1 Section 32 Evaluation Report February 2014

14.96 Ellesmere Irrigation Society and Bowden Environmental seek removal of any reference to "*combined surface and groundwater allocation zones*" in condition 3(a).

14.97 Four submitters, including Irrigation NZ, seek that condition 3(c) preventing the transfer of groundwater from down-plains to up-plains be deleted.

14.98 The reason for prohibiting the transfer of groundwater from down-plains to up-plains is to avoid an increase in the long-term cumulative effect of groundwater abstraction on groundwater levels and stream flows. It is also noted that Policy 11.4.22 and Rule 11.5.37 did not address the adverse effects of transferring groundwater from up-plains to down-plains. This is considered unnecessary if Central Plains Water shareholders are prohibited from transferring their groundwater takes. It is accepted that condition 11.5.37(3)(c) is also unnecessary if users are required to surrender 50% of transferred water as this will firstly discourage transfers, and where they do occur, return a proportion of water to the environment, thereby lessening any effects.

14.99 Six submitters seek the deletion of condition 3(d) and strongly oppose Central Plains Water shareholders being prevented from transferring their groundwater consents for a variety of reasons including:

- It is inequitable that irrigation scheme shareholders are unable to transfer resource consents whereas those who are not shareholders can;
- Irrigation scheme shareholders are prevented from obtaining any financial recompense from the transfer of their groundwater resource consent having made substantial investment twice – in obtaining their consent and in subscribing to the irrigation scheme;
- Farmers will be deterred from joining Central Plains Water if transfers within the same property or between properties owned or operated by the same person are not able to occur;
- The rule prevents properties from improving reliability of supply from the transfer and conjunctive use of groundwater and Irrigation Scheme water;
- It will deter current groundwater users taking up their shares in the irrigation scheme and replacing groundwater takes with surface water;
- It will reduce the extent of alpine water entering the catchment, potentially providing a worse environmental outcome than the status quo; and
- Central Plains Water requires that groundwater is transferred to the scheme without surrender for it to use as 'stored water' to provide supplementary supply for reliability.

14.100 Several submitters request provision for consent holders to transfer water to another parcel of land owned by the same consent holder, farming enterprise, related entity or to other sites within the scheme area. For example, Central Plains Water request that condition 3(d) reads: *"the transfer to another Property owned by the same person or a related entity (as that term is defined in section 2(3) of the Companies Act 1993)"*.

14.101 Irrigation NZ requests that condition 3(d) be amended to read: *"(d) the transfer is not from a person who holds shares in an Irrigation Scheme in the Irrigation Scheme Area as shown on the Planning Maps unless it is within a farming enterprise"*

14.102 Ellesmere Irrigation Society Inc requests that condition 3(d)(iii) be amended to qualify that the stream depletion effect is no greater in the transferred location than the original location "*if it has a depletion effect of more than 5 L/s.*"

14.103 Central Plains Water requests that condition 3(d)(iii) is amended to read "*that the stream effect is no greater in the transferred location than in the original location unless an equivalent volume of surface water allocation from the affected water body can be surrendered alongside the transfer*".

14.104 Stream depletion effects, and the threshold for consideration, are well set-out in the pLWRP. There does not appear to be any difference in effect if the water is transferred. Accordingly, setting a different threshold is difficult to justify. The ability to off-set any stream depletion effects by surrendering at least an equivalent amount of surface water does have merit.

14.105 The matters raised by the submitters are valid, however it is not considered appropriate to allow the transfer of groundwater by Central Plains Water shareholders to Central Plains Water or to different properties within the same ownership or a related entity for the reasons given in the analysis of submissions on Policy 11.4.22.

14.106 Transfers would promote efficient water use by consent holders which would be desirable if the two zones were not over-allocated. However, they are not appropriate where there is a statutory requirement to phase out over-allocation nor are they compatible with the solution for improving the overall water balance in the catchment. This relies on alpine river water replacing 30,000 ha of groundwater abstraction within the catchment. If transfers are not restricted then groundwater takes will not be retired and outcomes for rivers and streams will not be met. Furthermore, water permits are granted for a particular use on a specified area of land and not on the basis that water is able to be transferred to another site for another activity.

50% surrender requirement (11.5.37(4))

14.107 Seventeen submitters oppose Condition 4(d) which requires 50 percent of transferred water within the Rakaia-Selwyn and Selwyn-Waimakariri combined surface and groundwater allocation zones to be surrendered for the reasons outlined under Policy 11.4.22.

14.108 Many submissions and further submissions including those from Irrigation NZ, HydroTrader, Central Plains Water, Bowden Environmental, Ellesmere Irrigation Society Inc, Lake Ellesmere Dairy Farmers Group, Horticulture NZ, ANZCO & CMP and Southbank Dairies seek the deletion of condition 4. A number of submitters propose alternative regimes, for example:

- Replace 50% with 25% surrender with discretionary activity status if less than 25% surrender is proposed (Dunsandel Groundwater Users Group);
- Make 50% surrender a maximum with the % surrender a matter of discretion (Dairy NZ, Fonterra);
- Make % surrender a matter of discretion only as in the pLWRP decision (ANZCO & CMP);
- Allow only A block water (the quantum likely to be used in an average rainfall year) and water used in the last 5 years to be transferred (Federated Farmers);
- Exempt takes less than 100 m^3 per day from surrender requirements (Waitikiri Gardens); and
- Exempt the transfer of surface water takes from transfer restrictions (Mr & Mrs Brownlee).

14.109 The alternatives and reasons for requesting more lenient transfer rules are valid when considered solely from an efficiency and consent holder's viewpoint. However, the limits proposed for the Selwyn-Waimakariri and Rakaia-Selwyn combined surface and groundwater allocation zones are significantly exceeded by an estimated 27% and 64% respectively[212]. As is discussed above in relation to the policies, the priority is to phase out over-allocation to meet the obligations in the NPSFM and improve low flows and the poor ecological and cultural health of the lowland streams. The 50 percent surrender requirement in these two zones is to discourage transfers, so that if a consent holder no longer requires their full water allocation any surplus remains in the environment and is not re-allocated. If water is transferred to another user in an over-allocated catchment this may exacerbate the effects associated with over-allocation.

14.110 It is not necessary to exempt small groundwater takes of less than 100 m^3 per day from the surrender requirements because takes of between 10 and 100 m^3 per day are able to be taken without the need for consent in any case under region-wide Rules 5.113 and 5.114.

Matters over which CRC exercises discretion

14.111 Several submitters request changes.

14.112 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seek two additional matters of discretion. The first is that "*The effects of the proposed take and use upon Ngāi Tahu cultural values*" are considered (especially in relation to the Cultural Landscape/Values Management Area). The second is whether sufficient evidence is provided to show that the water being transferred has physically been taken, and reads "*For a partial transfer, whether the combined rate of take and annual volume of the water being transferred and that being kept can be demonstrated as being physically taken in the past*".

14.113 Central Plains Water requests that matter 4 is amended to read "*The likely irrigation efficiency*" and that matters 5 and 6 are combined and relate specifically to surface water.

14.114 Three submitters suggest additional matters of discretion to give effect to their submission that the volume of water to be surrendered under 11.5.37(4) is dealt with on a case by case

[212] Section 32 Evaluation Report (Section 11.4 p149)

basis. Dairy NZ and Fonterra request an additional matter of discretion that reads "*The volume of the take to be surrendered.*"

14.115 ANZCO & CMP request an additional matter that reads "*Where the surface water and/or groundwater allocation limits set in Section 11 are exceeded, any reduction in the rate or volume of take that may be required to assist with the phasing out of that exceedance.*"

14.116 It is not considered appropriate to insert additional matters of discretion relating to the effect of transfers on cultural values, including within the Cultural Landscape/Values Management Area at this stage. At the time of drafting, Te Taumutu Rūnanga considered the provisions in Variation 1, including where additional matters of discretion were required to protect cultural values. It is also noted that any application to transfer water will still be required to assess the effects of the abstraction in the new location and this will afford adequate consideration and protection of cultural values.

14.117 An additional matter on whether the water demonstrated has been used in the past would be consistent with the direction of Variation 1 that seeks to avoid the transfer of 'surplus' water. A risk is that this may encourage irrigators to utilise their consent at the existing site to maximise the volume of water that is able to be transferred. However, other Variation 1 provisions, including the requirement to irrigate efficiently in Schedule 24, may limit profligate use of water.

14.118 The various requests to reduce or make the proportion of water to be surrendered a matter of discretion (as in regional Rule 5.133) is not appropriate given the level of over-allocation in the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones and the poor state of many of the lowland streams in terms of their flows, water quality and ecological health.

14.119 Specifying a proportion to be surrendered in a condition of Rule 11.5.37, as opposed to a matter of discretion, is also more efficient because it provides certainty for the applicant and avoids situations (presently occurring under the pLWRP) where a token percentage surrender is offered, leading to litigation on a case by case basis.

Recommendation R 11.5.37

That Rule 11.5.37 is amended to read:

11.5.37 The temporary or permanent transfer, in whole or in part, (other than to the new owner of the site to which the take and use of water relates and where the location of the take and use of water does not change) of a water permit to take or use surface water or groundwater within the Selwyn Te Waihora catchment, is a restricted discretionary activity, provided the following conditions are met:

1. The reliability of supply for any other lawfully established water take is not reduced; and

2. *In the case of surface water, the point of take remains within the same surface water catchment and the take complies with the minimum flow and restriction regime in Tables 11(c) and 11(d); or*
3. *In the case of groundwater:*
   - (a) *the point of take is within the same groundwater allocation zone or combined surface and groundwater allocation zone; and*
   - (b) *the bore interference effects as set out in Schedule 12 are acceptable; and*
   - ~~(c) the transfer is not from down-plains to up-plains; and~~[213]
   - (c) *the transfer is not from a person who holds shares in an Irrigation Scheme in the Irrigation Scheme Area as shown on the Planning Maps; and*
   - (d) *In addition for stream depleting groundwater takes:*
     - (i) *the transfer is within the same surface water catchment; and*
     - (ii) *the take complies with the minimum flow and restriction regime in Table 11(c) and 11(d); and*
     - (iii) *the stream depletion effect is no greater in the transferred location than in the original location unless at least an equivalent volume of surface water allocation from the affected water body can be surrendered alongside the transfer, for at least the duration of the transferred take*[214]*; and*
4. *If the transfer is within the Rakaia-Selwyn or Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zones 50% of the volume of transferred water is to be surrendered.*

The exercise of discretion is restricted to the following matters:

1. *The nature of the transfer, whether short term, long term, partial or full, and the apportioning of the maximum rate of take and annual volume in the case of a partial transfer; and*
2. *The appropriateness of conditions, including conditions on minimum flow, annual volume and other restrictions to mitigate effects; and*
3. *The reasonable need for the quantities of water sought, the intended use of the water and the ability of the applicant to abstract and use those quantities; and*
4. *The efficiency of the exercise of the resource consent; and*
5. *The reduction in the rate of take in times of low flow; and*
6. *The method of preventing fish from entering any water intake and~~.~~*
7. *Whether the rate of take and annual volume of the water being transferred, and any not being transferred, can be demonstrated as being physically taken, and used in an efficient manner, in the past.*[215]

[213] V1pLWRP-331 - Dunsandel Groundwater Users Group; V1pLWRP-193 - HydroTrader; V1pLWRP-596 - Bowden Environmental; V1pLWRP-1083 - Irrigation NZ
[214] V1pLWRP-433 - Central Plains Water
[215] V1pLWRP-454 – Nga Rūnanga and Te Rūnanga O Ngāi Tahu

Rule 11.5.38

14.120 Rule 11.5.38 reads:

> *11.5.38 Despite Rule 11.5.37, the permanent transfer, in whole or in part, of a water permit to take or use surface water or groundwater in the Selwyn Waihora catchment, is a discretionary activity provided the following condition is met:*
>
> *1. The take is to be transferred to a local authority and is to be used for community water supply.*

14.121 Rule 11.5.38 received four submissions requesting amendments and three further submissions.

14.122 Selwyn DC seeks that the activity status is amended from discretionary to permitted. The submitter highlights that there are a number of situations where existing water permits are transferred directly from the original developer of land or a sub-divider to the Council who then takes responsibility for the provision of the water supply to the community. The Selwyn DC considers that it is neither appropriate nor efficient nor effective to require resource consent as a discretionary activity for such a transfer.

14.123 If the site to which the take relates is also being transferred, then the "new owner" provisions of section 136(1) of the RMA will apply. In other circumstances, the discretionary status is still considered appropriate. Under s136 of the RMA an application to transfer a water permit (in whole or in part) is assessed as if it were an application for a new permit. As such there is a need for the consent authority to have regard to the effects of the transfer and potentially include new conditions pertaining to the use of water for public water supply.

14.124 Central Plains Water, Dairy Holdings and McKavanagh Holdings Ltd seek similar amendments in that Rule 11.5.38 is extended to provide for a discretionary activity where the take is transferred to an irrigation scheme or within a farming enterprise to deal with limitations in reliability of supply from Central Plains Water:

(b) <u>The take is to be transferred to an Irrigation Scheme or is a site to site transfer by an irrigation scheme and it is intended to be used to improve reliability at times when the surface water able to accessed by the Irrigation Scheme is on restriction; or</u>

(c) <u>Where the permit holder is a shareholder in an Irrigation Scheme, the take is to be transferred within the permit holder's existing farm enterprise.</u>

14.125 The request to enable the transfer of water to an irrigation scheme to improve the scheme's reliability or within the permit holder's existing farm enterprise is not considered appropriate within the Rakaia-Selwyn and Selwyn-Waimakariri zones which are over-allocated for the reasons previously stated. The intent of this rule is to enable community supplies only, as a higher priority water use under the CWMS.

Recommendation R 11.5.38

That Rule 11.5.38 be amended to read:

11.5.38 Despite Rule 11.5.37, the permanent transfer, in whole or in part, (other than to the new owner of the site at which the water is abstracted and where the location of the take and use of water does not change)[216] *of a water permit to take or use surface water or groundwater in the Selwyn Te Waihora catchment, is a discretionary activity provided the following condition is met:*

1. The take is to be transferred to a local authority and is to be used for community water supply.

Rule 11.5.39

14.126 Rule 11.5.39 reads:

11.5.39 The transfer, in whole or in part, of a water permit to take or use surface water or groundwater in the Selwyn Waihora catchment that does not meet one of the conditions of Rule 11.5.37 or Rule 11.5.38 is a prohibited activity.

14.127 Rule 11.5.39 received nine submissions and 10 further submissions with most submitters requesting a change to the activity status.

14.128 One submitter requests that the rule is retained, one submitter requests the rule is deleted and seven submitters request amendments. Synlait Farms and Synlait Milk request that transfers are not prohibited in zones that are over-allocated.

14.129 HydroTrader and L&M Coal Whitecliffs request that Rule 11.5.39 is deleted or, as secondary and less preferred relief, that the activity status is amended from prohibited to discretionary. Dunsandel Groundwater Users Group requests that the activity status is amended from prohibited to discretionary.

14.130 Bowden Environmental and Ellesmere Irrigation Society request that the activity status is amended from prohibited to non-complying on the grounds that there will be some activities that do not cause any significant adverse effects on the environment.

14.131 Dairy Holdings supports Rule 11.5.39, presumably on the assumption that the submitter's requests for amendments to Rule 11.5.37 and 11.5.38 are adopted.

14.132 It is acknowledged that the rules on transfers will not be palatable to all water users. However, the situation in the catchment is one where water resources have been allocated beyond the existing limits in the NRRP and pLWRP and the proposed limits in Variation 1. As a consequence, stream flows, freshwater outcomes and cultural values have become

[216] V1pLWRP-534 - Selwyn DC

significantly degraded. Regional councils are also legally obliged to phase out existing over-allocation under the NPSFM.

14.133 The importation of alpine water via the Central Plains Water Irrigation Scheme provides an opportunity for both development and to contribute to a reduction in over allocation. Restoring flows to provide for ecological and cultural values in streams and rivers is reliant on the replacement of 30,000 ha of groundwater irrigation with surface water and that surplus (no longer required) water is not transferred within the two zones that are over-allocated.

14.134 It is important to be clear that Central Plains Water shareholders are not required to surrender their groundwater permits and can exercise them to make up any shortfall in supply reliability from Central Plains Water. It is on consent replacement that users are likely to receive a reduced allocation, taking into account records of water use and the volume of water supplied by the Scheme.

14.135 For these reasons the prohibited status for transfers that do not meet the conditions in Rules 11.5.37 and 11.5.38 is considered appropriate.

Recommendation R 11.5.39

13.135 That Rule 11.5.39 is amended to read:

> *11.5.39 The transfer, in whole or in part, of a water permit to take or use surface water or groundwater in the Selwyn Te Waihora catchment that does not meet the terms of one of the conditions of Rule 11.5.37, Rule 11.5.37A*[217] *or Rule 11.5.38 is a prohibited activity.*

New Rule 11.5.37A (Canterbury Aggregate Producers Group)

14.136 The Canterbury Aggregate Producers Group requests the addition of a new rule (11.5.37A) that deals specifically with water transfers in the aggregate industry in Section 11. The proposed rule is the same as that inserted into Section 9 (refer Rule 9.5.8) in the pLWRP decisions:
"The temporary or permanent site to site transfer, in whole or in part, of a water permit to take or use water for gravel extraction (and associated purposes) is a discretionary activity provided the water is used for the same purpose."

14.137 Based on the reasons identified in the pLWRP decisions, it is recognised that non-consumptive takes for purposes such as gravel extraction require site to site transfers to maintain viable operations. In reference to the decision in the pLWRP, the inclusion of a rule to allow for non-consumptive takes is appropriate.

[217] V1pLWRP-638 - Canterbury Aggregate Producers Group (consequential amendment)

Recommendation R 11.5.37A

That a new Rule 11.5.37A is inserted and reads:

11.5.37A The temporary or permanent site to site transfer, in whole or in part, of a water permit to take or use water for gravel extraction (and associated purposes) is a discretionary activity provided the water is used for the same purpose.[218]

[218] V1pLWRP-638 Canterbury Aggregate Producers Group

15 Dams and Damming

15.1 Storing alpine water taken from the Rakaia River and Waimakariri River by Central Plains Water is necessary to achieve the Priority Outcomes for the catchment identified in the Selwyn Waihora ZIP. Water storage will enable Central Plains Water Scheme to provide its members with a reliable supply of surface water that in turn will enable the retirement of groundwater takes in the upper plains area above SH1. This will partly address over-allocation of groundwater and its effects by leaving water in the aquifer to support spring flows in the lowland streams. Stored water also provides potential opportunities for managed aquifer recharge outside of the irrigation season and resilience to climate change[219].

15.2 Policies 11.4.31 and 11.4.32 give effect to the Zone Committee's recommendations on areas where water storage should be avoided and on constraints or 'red flags' to be addressed where water storage is enabled, having considered the outcomes of a report providing an assessment of potential water storage areas against CWMS and other key targets[220].

15.3 Policies 11.4.31 and 11.4.32 relate only to the physical storing of imported alpine water and are in addition to Regional Policies 4.44 and 4.46 on damming. As it is proposed to manage surface and groundwater as one combined resource within the Selwyn Te Waihora catchment no further water can be harvested for storage from streams and rivers within the catchment since zones are fully or over-allocated.

Policy 11.4.31 and Rule 11.5.42

15.4 Policy 11.4.31 and Rule 11.5.42 are sufficiently related that it is beneficial to assess them together. Policy 11.4.31 and Rule 11.5.42 read:

11.4.31 Prohibit in-stream damming of the full flow on the main stem of the Selwyn River/Waikirikiri and the Waiāniwaniwa River above its confluence with the Selwyn River/Waikirikiri.

11.5.42 The damming of the full flow of water within the bed of the main stem of the Selwyn River/Waikirikiri between the mouth at or about map reference BX23: 5559-5636 to BW21:9667-9703 and BX21:9752-8937, and within the bed of the Waiāniwaniwa River above the confluence with the Selwyn River/Waikirikiri at or about map reference BX22: 2494-7347 to BW21:1130-9083 is a prohibited activity.

15.5 Policy 11.4.31 received at least 14 submissions and 19 further submissions. Most request the policy is deleted and several request various amendments.

[219] Proposed Variation 1 to the Proposed Canterbury Land and Water Regional Plan Section 32 Evaluation Report (February 2014)

[220] Preliminary assessment of Selwyn-Waihora potential water storage areas against CWMS and other key targets (Painter, October 2013)

15.6 Rule 11.5.42 received 10 submissions and 12 further submissions. Most submitters oppose the rule, including four who request that it is deleted.

15.7 Most submitters lodged similar submissions to both the policy and the rule. In the main, the policy is assessed below, with consistent amendments to the rule recommended.

15.8 Te Taumutu Rūnanga requests that the policy is retained as it reflects the outcomes of the Kaitiakitanga Assessment for storage options and Mahaanui Iwi Management Plan 2013. Nga Rūnanga and Te Rūnanga o Ngāi Tahu support the policy but request that it is re-worded to read *"Prohibit the in-stream damming of the full flow on the main stem of Waikirikiri/Selwyn River and Waiāniwaniwa River*."

Four submitters support the prohibition of in-stream damming of the flow in the Selwyn River and Waiāniwaniwa River. The submitters highlight that the Waiāniwaniwa catchment is a significant and possibly the only sustainable habitat for Canterbury mudfish that nationally are classified as critically endangered.

15.9 Two submitters request that the prohibition on damming is extended to include all tributaries of the Selwyn and Waiāniwaniwa Rivers. The Director General of Conservation and Forest and Bird request Policy 11.4.31 is amended to delete reference to the 'full-flow' and extended to include tributaries of the Waiāniwaniwa River to give proper effect to Part II RMA. The submitters recommend the following wording: *"Prohibit in-stream damming of ~~the full flow on~~ the main stem of the Selwyn River/Waikirikiri, and the Waiāniwaniwa River including all tributaries above its confluence with the Selwyn River/Waikirikiri."*

15.10 Fish and Game requests the following amendments: *"Prohibit in-stream damming of the full flow on the entire main stem of the Selwyn River/Waikirikiri, and separately prohibit instream damming of the Waiāniwaniwa River mainstem above its confluence with the Selwyn River/Waikirikiri."*

15.11 Central Plains Water seeks that Policy 11.4.31 is deleted. The submitter acknowledges that it has no current proposal for large scale storage but that damming of the Waiāniwaniwa Valley might be the only viable option for large scale storage within the Selwyn Waihora sub-regional area. The submitter also considers that prohibition at a policy level is unjustified as circumstances may change and Central Plains Water may require large scale storage in the future.

15.12 Dunsandel Groundwater Users Group requests that damming the Selwyn and Waiāniwaniwa Rivers is wholly discretionary on the basis that water storage is vital for growth within limits especially as Variation 1 precludes any growth based on groundwater.

15.13 Four submitters, including Irrigation NZ, state that the Zone Committee 'red flagged' key issues to be addressed by developers if water storage was to occur on these rivers but there was no agreement or recommendation to prohibit damming on the main stems of the

Selwyn and Waiāniwaniwa Rivers in its ZIP Addendum. In this respect submitters state that Variation 1 does not reflect the Zone Committee or community agreed position.

15.14 Several submitters, including Central Plains Water, oppose prohibiting storage on the main stems of the Selwyn and Waiāniwaniwa Rivers as this excludes potentially viable storage options or may impact the scheme's economic viability.

15.15 Between 2012 and 2013, the Selwyn Waihora Zone Committee assessed potential water storage areas against CWMS and other key targets namely: ecosystem health/biodiversity; natural character of braided rivers; kaitiakitanga; quality drinking water; recreational and amenity opportunities; water use efficiency; irrigated land area; energy security and efficiency; regional and national economies; local communities; multiple uses and economic viability.

15.16 In July 2012 the Zone Committee's Water Supply Working Group was presented with information on potential storage areas and chose to progress the Upper Selwyn Te Waihora plains/foothills and Waiāniwaniwa to a preliminary strategic assessment. The strategic assessment identified "red flags" or key issues that would need to be addressed with the Upper Selwyn Te Waihora plains and foothills and Waiāniwaniwa River and the extent to which they are at odds with the achievement of CWMS and other targets.

15.17 In August 2013 the Malvern Hills Protection Society expressed significant concern about the potential construction of a dam in the Waiāniwaniwa Valley when the original proposal for a large storage dam and reservoir had been dropped during the course of the Central Plains Water hearing. Although it did not form part of the final decision the independent hearing commissioners provided their reasoning for considering the proposed storage dam and reservoir to be unsustainable in respect of Part 2 of the RMA in Minute 10[221]. The following are relevant extracts:

"4.2 So far as Part 2 is concerned, we have adopted an overall balancing approach. In terms of the sustainable management purpose of the Act (section 5) we have concluded that while the dam, reservoir may promote the economic wellbeing of the wider Canterbury and national community, they would not promote the social, economic or cultural wellbeing of the Waianiwaniwa and Coalgate communities. Many of the negative impacts of the scheme would fall on these communities and few if any benefits."

"4.5 In terms of section 5, the dam, reservoir and the upper Waimakariri intake would clearly have more than minor adverse effects on the environment and, we are not satisfied that those effects could be adequately mitigated to a point where they would become minor."

15.18 As is discussed in the Zone Committee section of this Section 42A Report, the Zone Committee agreed with these sentiments and considered it appropriate to prohibit damming in these catchments.

[221] Minute 10 of Commissioners Preliminary Recommendation and summary of conclusions and reasoning in relation to the proposed Waianiwaniwa reservoir and dam and the upper Waimakariri intake 10 July 2009

15.19 It is noted that, prohibiting storage on the main stems of the Selwyn/Waikirikiri and Waiāniwaniwa Rivers does not preclude storage proposals in other locations, for example in the upper plains along the proposed Central Plains Water headrace canal or in other foothills rivers if suitable and needed to top-up reliability for Central Plains Water.

15.20 It is not recommended to extend the prohibition on damming to tributaries of the Selwyn River/Waikirikiri and/or Waiāniwaniwa River as sought by several submitters. The Zone Committee sees the development of water storage as essential to deliver the outcomes for the catchment and does not wish to prohibit storage in the foothills, except for the main stems of the Selwyn and Waiāniwaniwa Rivers.

15.21 The request from the Director General of Conservation and Forest and Bird to delete the term *'full flow'* is recommended to be accepted. The term is unnecessary as the pLWRP definition of a dam refers to a structure that is the full width of a water body and specifically excludes structures for water takes that are not the full width of the water body.

15.22 Selwyn DC did not submit on Policy 11.4.31 but requests that Rule 11.5.42 is deleted or that a definition is included that excludes culverts, fords and water intake structures for community supplies and stock water on the Selwyn River.

15.23 This amendment is unnecessary as the pLWRP definition of a dam refers to a structure that is the full width of a water body and specifically excludes structures for water takes that are not the full width of the water body. The definition of damming means 'the impounding of water by a dam' which would exclude culverts and fords.

Recommendation R 11.4.31

That a Policy 11.4.31 is amended to read:

11.4.31 Prohibit in-stream damming ~~of the full flow~~[222] on the main stem of the Selwyn River/Waikirikiri and the main stem of the[223] Waiāniwaniwa River above its confluence with the Selwyn River/Waikirikiri.

Recommendation R 11.5.42

That Rule 11.5.42 is amended to read:

11.5.42 The damming ~~of the full flow~~[224] of water within the bed of the main stem of the Selwyn River/Waikirikiri between the mouth at or about map reference BX23: 5559-5636 to BW21:9667-9703 and BX21:9752-8937, and within the bed of the main stem[225] of the

[222] V1pLWRP-223 - Director General of Conservation; V1pLWRP-1301 - Forest and Bird
[223] V1pLWRP-692 - Fish and Game
[224] V1pLWRP-246 - Director General of Conservation; V1pLWRP-1322 - Forest and Bird
[225] V1pLWRP-692 - Fish and Game

Waiāniwaniwa River above the confluence with the Selwyn River/Waikirikiri at or about map reference BX22: 2494-7347 to BW21:1130-9083 is a prohibited activity.

Policy 11.4.32

15.24 Policy 11.4.32 reads:

11.4.32 Enable the storage of water from the Rakaia River and Waimakariri River to improve the reliability of supply of Irrigation Scheme water and support a reduction in the use of groundwater provided:

(a) A Ngāi Tahu cultural impact assessment has been undertaken; and

(b) The mixing of water from different water bodies is avoided or mitigated through site specific design; and

(c) Adverse effects on cultural values are satisfactorily avoided or mitigated in accordance with the recommendations in the cultural impact assessment; and

(d) Adverse effects on the availability and quality of community drinking water are avoided; and

(e) Inundation of existing wetlands is avoided or mitigated through site specific design; and

(f) Adverse effects on fish passage are mitigated; and

(g) Inundation of river reaches with significant indigenous vegetation or significant habitat of indigenous biodiversity is avoided; and

(h) Inundation of known trout and salmon spawning areas is avoided; and

(i) Infrastructure is designed to accommodate the effects of climate change.

15.25 Policy 11.4.32 received 16 submissions and 16 further submissions. Five submitters seek that the policy is retained (in whole or in part), one requests that the policy is deleted, and 10 request various amendments.

15.26 One submitter requests that the policy is deleted on the basis that the submitter is opposed to large scale irrigation schemes that would potentially increase flooding, especially in Hororata. Two submitters support the retention of clauses that provide environmental protection but remain unconvinced that large scale water storage will deliver the anticipated environmental benefits.

15.27 The Director General of Conservation, Forest and Bird, and Fish and Game support the intent of the policy and request it is retained as written.

15.28 Fonterra and Dairy NZ request the introductory text of Policy 11.4.32 is amended to read "…*support a reduction in the use of groundwater* *(where appropriate)* *provided*…" as the submitters regard the continued use of groundwater to be appropriate in some circumstances.

15.29 This amendment is not necessary as the words '…a reduction in the use of groundwater…' does not preclude its continued use, simply that less groundwater is used, which is clearly what is needed in a catchment where water allocation exceeds the limits.

15.30 Several submitters strongly oppose the requirement in clauses 11.4.32(a) and 11.4.32(c) to undertake and implement the recommendations of a cultural impact assessment. TrustPower, Irrigation NZ, Federated Farmers and several other submitters suggest too much weight is given to the cultural impact assessment and there is insufficient discretion to accept or reject its contents.

15.31 Due to the cultural significance of the entire Selwyn Te Waihora sub-regional area and the large network of cultural sites, it is recommended to reject these requests relating to clause 11.4.32(a).

15.32 Submitters raise a valid point that clause 11.4.32(c) could be interpreted as requiring that all recommendations in the Cultural Impact Assessment are implemented, thus impeding the freedom of the decision maker as to how potential adverse effects of water storage on cultural values are to be addressed. It is accepted that clause 11.4.32(c) could be re-worded to provide the decision maker with full discretion whilst retaining the expectation that potential adverse effects are avoided, remedied or mitigated.

15.33 Several submitters request that clause 11.4.32(b), on mixing of waters, be deleted as it is covered by clause 11.4.32(c). Te Taumutu Rūnanga requests that clause 11.4.32(c) is amended to read: "*Adverse effects on cultural values, <u>including those associated with unnatural mixing of waters</u>, are satisfactorily avoided or mitigated in accordance with the recommendations in the cultural impact assessment*".

15.34 It is agreed that there is overlap between 11.4.32(b) and 11.4.32(c) and that both could be combined as suggested by Te Taumutu Rūnanga.

15.35 Nga Rūnanga and Te Rūnanga o Ngāi Tahu proposes a complete replacement policy that reads:

<u>"Enable the storage of alpine water provided the storage does not:</u>

<u>(a) Adversely impact upon Ngāi Tahu cultural values including, but not limited to, the abundance of and quality of Mahinga Kai and the mixing of waters, unless the adverse impacts on cultural values can be addressed to the satisfaction of Ngāi Tahu; and</u>

<u>(b) Reduces the availability and quality of drinking water from that available as of 13 February 2014; and</u>

<u>(c) There is no reduction in amount of or quality of natural wetlands; and</u>

<u>(d) Any adverse impact upon fish migration; and</u>

<u>(e) There is no reduction in any areas of significant indigenous vegetation or biodiversity."</u>

15.36 The submitter's clause (a) has the effect of requiring secondary approval from Ngāi Tahu and fettering the discretion of the decision maker as noted already in relation to 11.4.32(c). It is

considered that the submitter's other points are sufficiently addressed by Policy 11.4.23 and the proposed amendments, albeit worded differently.

15.37 Central Plains Water seeks that clauses (c) (d) (e) (f) (g) and (h) all contain the words "*avoided, remedied or mitigated*":

"(c) Adverse effects on cultural values are satisfactorily avoided, remedied or mitigated in accordance with the recommendations in the cultural impact assessment; and

(d) Adverse effects on the availability and quality of community drinking water are avoided, remedied or mitigation; and

(e) Inundation of existing wetlands is avoided, remedied or mitigated through site specific design; and

(f) Adverse effects on fish passage are avoided, remedied or mitigated; and

(g) Inundation of river reaches with significant indigenous vegetation or significant habitat of indigenous biodiversity is avoided, remedied or mitigated; and

(h) Inundation of known trout and salmon spawning areas is avoided, remedied or mitigated; and…"

15.38 Central Plains Waters amendments to clauses (c) (e) (f) and (h) are recommended to be accepted. This would insert an appropriate assessment hierarchy when considering how the effects of any damming proposal on cultural values, wetlands, fish passage and salmon and trout spawning areas are to be managed. It is also consistent with the recommendations in the Strategic Assessment of potential storage areas (October 2013) which identifies areas and a range of issues as "red flags" that are to be avoided in the first instance or where not possible mitigations developed.

15.39 However, it is considered that there is stronger policy direction in respect of community drinking water supplies and indigenous biodiversity.

15.40 In relation to (d) it is not considered appropriate to recommend lowering the threshold for 'avoiding' adverse effects on the availability and quality of community drinking water given its importance and widespread concern about high groundwater nitrate levels in particular. Objective 3.8A in the pLWRP also requires that high quality freshwater is available to meet actual and foreseeable needs.

15.41 With regard to (g) it is noted that pLWRP Objective 3.17 and CRPS Objectives 9.2.1 and 9.2.3 and Policy 9.3.1 essentially require that significant indigenous biodiversity values are protected and their decline halted.

15.42 It is not recommended to amend clause (g) to include *'remedy or mitigated'*. However, clause 11.4.32(g) could be worded to more closely align with CPRS Policy 9.3.1(3). This requires that there is no 'net loss' of indigenous biodiversity or indigenous biodiversity values. This would provide for biodiversity offsets after all prevention and mitigation measures have been taken and even potentially achieve a net gain in biodiversity. CPRS Policy 9.3.6 provides strong guidance on the limitations and use of biodiversity offsets. This may also address aspects of Nga Rūnanga and Te Rūnanga O Ngāi Tahu's submission.

15.43 TrustPower requests that clause (d) is amended to apply to "…*existing community drinking water supplies*…".

15.44 Whilst the emphasis will be on avoiding effects on the availability and quality of existing community supplies, it may be appropriate to also consider potential impacts on community drinking water supplies that are planned, for example if a new settlement is planned but not yet built. Limiting 11.4.32(d) to consideration of existing supplies is recommended to be rejected.

15.45 Four submitters request amendments to clause (h) which requires that inundation of known salmon and trout spawning areas is avoided.

15.46 TrustPower, Dairy NZ, Fonterra and Irrigation NZ all request the words "…*known trout and salmon spawning areas*…" are amended to "…*significant trout and salmon spawning areas*…" as the term 'known' is considered imprecise. TrustPower further seeks that the requirement to avoid such spawning areas is based on an identified Schedule within Section 11 and referred to in clause (h).

15.47 Changing 11.4.32(d) to refer to 'significant' trout and salmon spawning areas is supported for the reasons given. Whilst a new Schedule of significant salmon and trout spawning areas may be desirable, there is no single authoritative information source, and a likely inability to introduce such a schedule within the scope of the decision requested in the submission – no indication is given as to the content of the suggested schedule. It is appropriate therefore, that the developer determines if the proposed storage site is a significant spawning area through review of available information sources and on-site investigation.

Recommendation R11.4.32

That a Policy 11.4.32 is amended to read:

11.4.32 Enable the storage of water from the Rakaia River and Waimakariri River to improve the reliability of supply of Irrigation Scheme water and support a reduction in the use of groundwater provided:

(a) A Ngāi Tahu cultural impact assessment has been undertaken; and

~~(b) The mixing of water from different water bodies is avoided or mitigated through site specific design; and~~[226]

(b) Adverse effects on cultural values, including those associated with unnatural mixing of waters[227]*, are satisfactorily avoided, remedied*[228] *or mitigated having particular regard to*[229] *~~in accordance with~~ the recommendations in the cultural impact assessment; and*

[226] V1pLWRP-296 - Te Taumutu Rūnanga; V1pLWRP-400 - Central Plains Water
[227] V1pLWRP-296 - Te Taumutu Rūnanga; V1pLWRP-400 - Central Plains Water
[228] V1pLWRP-400 Central Plains Water
[229] V1pLWRP-980 - TrustPower Ltd; V1pLWRP-873 - Federated Farmers; V1pLWRP-1075 - Irrigation NZ; V1pLWRP1621 - The Canterbury Farming Company

(c) Adverse effects on the availability and quality of existing and proposed[230] community drinking water supplies[231] are avoided; and

(d) Inundation of existing wetlands is avoided, remedied[232] or mitigated through site specific design; and

(e) Adverse effects on fish passage are avoided, remedied or[233] mitigated; and

(f) ~~Inundation of river reaches with significant indigenous vegetation or significant habitat of indigenous biodiversity is avoided~~ There is no net loss of significant indigenous vegetation or significant habitat of indigenous biodiversity from the inundation of river reaches[234]; and

(g) Inundation of ~~known~~ significant[235] trout and salmon spawning areas is avoided remedied or mitigated[236]; and

(h) Infrastructure is designed to accommodate the effects of climate change.

[230] V1pLWRP-980 - TrustPower Ltd
[231] V1pLWRP-980 - TrustPower Ltd
[232] V1pLWRP-400 Central Plains Water
[233] V1pLWRP-400 Central Plains Water
[234] V1pLWRP-400 Central Plains Water; V1pLWRP-415 Nga Rūnanga and Te Rūnanga O Ngāi Tahu
[235] V1pLWRP-980 - TrustPower Ltd; V1pLWRP-1362 Dairy NZ; V1pLWRP-1075 Irrigation NZ; V1pLWRP-1264 Fonterra
[236] V1pLWRP-400 Central Plains Water

16 Flow Sensitive Catchments

Section 11.9

16.1 Flow-sensitive catchments are those surface water catchments where there is potential for afforestation to intercept rainfall runoff and significantly reduce flow.

16.2 Catchments identified as 'flow sensitive' are included in the sub-regional sections of the pLWRP and are managed through region-wide Policy 4.75 and region-wide Rules 5.72 to 5.74 which set out conditions for replanting and new areas of plantation forest.

16.3 There is an established process for identifying flow sensitive catchments and determining whether they should be included in the pLWRP. The catchments identified as flow sensitive in the Section 11.7 of the pLWRP are: Upper Selwyn River/Waikirikiri (catchment upstream of Whitecliffs); Hororata River (upstream of SH72); Kaituna River (whole catchment); and Prices Valley Stream (whole catchment).

16.4 Variation 1 introduces the following two additional flow sensitive catchments into Section 11.9 (formerly Section 11.7): Upper Waiāniwaniwa (catchment upstream of Auchenflower Road); and Hawkins River (catchment upstream of Dalethorpe/Willows).

16.5 Both the Upper Waianiwaniwa and Hawkins Rivers were identified as flow sensitive catchments in the NRRP but were omitted from the pLWRP because the last step in the modelling process (sensitivity analysis) had not been done. A modelling study has now been completed which shows that both catchments are sensitive to forest development because the 7-day MALF is reduced more than 5% when less than 25% of the total catchment area is afforested (NIWA, 2013)[237]. Based on these results both catchments are included in proposed Variation 1.

16.6 No submissions were received on Section 11.9.

Recommendation R 11.9

That Section 11.9 is retained without amendment.

[237] The effect of vegetation change on water yield for two flow sensitive catchments in Canterbury: Phase 6 Report no. R13/98 (NIWA, October 2013).

17 Stock Exclusion

17.1 The stock exclusion rules apply in addition to Regional Rules 5.68, 5.69, 5.70 and 5.71.

17.2 The Variation 1 stock exclusion policy and rules have two main themes in addition to those of the region-wide rules:

- The exclusion of stock from drains; and
- The total exclusion of stock from all water bodies and wetlands in the Cultural Landscape/Values Management area.

17.3 Rule 11.5.19, which includes the Cultural Landscape/Values Management Area within the list of prohibited areas for stock accessing water bodies, is assessed with other rules that relate to the Cultural Landscape/Values Management Area.

17.4 As Policy 11.4.12(d) and Rule 11.5.18 are inherently related, and in need of consistent decision making, they are considered together below.

Policy 11.4.12(d) and Rule 11.5.18

17.5 Policy 11.4.12(d) is the only policy with direct reference to stock exclusion, and reads:

11.4.12 Reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from farming activities in the catchment by requiring farming activities to:
(a)-(c) …
(d) Exclude stock from drains, in addition to the regional requirements to exclude stock from lakes, rivers and wetlands.

17.6 Rule 11.5.18 states:

11.5.18 Within the Selwyn Waihora Catchment any reference to the bed of a lake, river or wetland in Rules 5.68, 5.69, 5.70 and 5.71 also includes an artificial watercourse (excluding an irrigation canal, water supply race or canal for the supply of water for electricity power generation).

17.7 "Drain" is defined in the pLWRP, and reads: *"includes any artificial watercourse that has been constructed for the purpose of land drainage of surface or subsurface water and can be a farm drainage channel, an open race or subsurface pipe, tile or mole drain, or culvert."*

17.8 An "Artificial watercourse" is defined in the pLWRP, and reads: *"means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for supply of water for electricity power generation, and farm drainage canal channel. It does not include artificial swales, kerb and channelling or other watercourses designed to convey stormwater"*.

17.9 A large number of submissions were received on Policy 11.4.12 and Rule 11.5.18. The whole policy covers a number of other issues, and is further analysed in the Nutrient and Sediment Management assessment. The analysis of Policy 11.4.12(d) is included here.

17.10 Recognition of the importance of stock exclusion rules for nutrient and sediment control is made in a number of submissions requesting retention of Policy 11.4.12(d) and/or Rule 11.5.18, including NZ King Salmon, the Director General of Conservation, Te Taumutu Rūnanga, E Moore, Christchurch City Council, Fish and Game, Malvern Hills Protection Society, Forest and Bird, and J Snoyink.

17.11 Te Taumutu Rūnanga requests that the Variation be consistent with the Mahaanui Iwi Management Plan 2013 which has a policy position of 'no stock access in waterways'.

17.12 The submissions in opposition are many and varied. A large number submitted only on the rules. However, the same sentiments and issues apply to the policy, such that consistent decisions are required.

17.13 The majority of the submitters request clarification of the definition of a drain or amendments to define what drains will be caught by the stock exclusion policy and rules. The decisions requested vary but are of a similar theme, seeking to exclude minor drains and some kinds of waterways. For example, the Lake Ellesmere Dairy Farmers Group requests a definition consistent with the Sustainable Dairying: Water Accord. This Accord defines a drain as: "An artificially created channel designed to lower the water table and/or reduce surface flood risk and which has permanently flowing water but does not include any modified (e.g. straightened) natural watercourse".

17.14 Fonterra and Dairy NZ request amendments to restrict the size of the drain to permanently flowing watercourses, greater than 1 m wide and 30 cm deep.

17.15 M Manson and Ellesmere Irrigation Society request that the policy and/or rule be deleted entirely.

17.16 Beef + Lamb NZ requests that the rule be amended to apply only to artificial watercourses that discharge to surface water. The submitter also requests that the policies and rules in Variation 1 better reflect the pLWRP stock access rules that permit stock access to water subject to conditions.

17.17 Federated Farmers seeks to amend the rule so it does not apply to hill and high country. Federated Farmers states that it supports the exclusion of intensively farmed stock from waterways. However the exclusion of extensively grazed stock, as stated in its submission, is prohibitively expensive, precludes stock access to stockwater, limits access to areas, precludes effective farming of hill blocks, and is not necessary to address water quality issues.

17.18 D Hasson requests amendments to Rule 11.5.18 to read: *"...in times of a power outage and on notifying the consent authority stock can access drain water on the same terms as a stockwater race.*" Similarly, B & A Moir and J Greenslade seek to amend Rule 11.5.18 to include that on notification of the consent authority, stock can access water on the same terms as stock water races.

17.19 Overall, the submissions highlight concerns due to inconsistency between the wording of the policy and the rule, inappropriate application to very small, typically dry drains or sub-surface drains, and practical difficulty in achieving the exclusion of stock from low lying areas that could be considered "drains".

17.20 Some confusion is created by the policy referring to "drains" while the Rule refers to "artificial water courses". Artificial water courses are defined in the pLWRP as *"means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for supply of water for electricity power generation, and farm drainage canal channel. It does not include artificial swales, kerb and channelling or other watercourses designed to convey stormwater"*. The Rule then goes on to specifically exclude some artificial water courses.

17.21 It is clear that not all drains will be considered artificial water courses within the definition and that not all artificial water courses are drains. This causes some issues with respect to those submitters who have requested a definition of "drain" and other submitters who have raised issues with respect to stock access to drinking water. It is also notable that the definition of artificial water course seeks to exclude some water bodies that are clearly ephemeral and of lower significance, such as storm water swales.

17.22 It is recommended that the policy and rule be made consistent, by both referring to "drains" and that some types of "drains" be specifically excluded from the Rule, such that subsurface drains, culverts, stormwater channels and low lying areas are not included within the definition. This will provide some practicality for farmers, maintain protection of water quality through the exclusion of stock from drains that discharge to surface water bodies and are subject to pugging and sedimentation.

Recommendation R 11.4.12(d) and R 11.5.18

Retain Policy 11.4.12(d) without amendment.

Amend Rule 11.5.18 to read:

11.5.18 Within the Selwyn Te Waihora Catchment any reference to the bed of a lake, river or wetland in Rules 5.68, 5.69, 5.70 and 5.71 also includes a drain, but does not include any sub-surface drain, stormwater swale or other artificial watercourse which is ephemeral in nature. ~~an~~

~~*artificial watercourse (excluding an irrigation canal, water supply race or canal for the supply of water for electricity power generation).*~~[238]

Rule 5.69

17.23 Rule 5.69 states:

> *5.69 The use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water that does not meet one or more of the conditions ~~2 to 4~~ of Rule 5.68, excluding condition 1 and is not listed as a non-complying activity under Rule 5.70 or a prohibited activity under Rule 5.71 is a discretionary activity.*

17.24 This amendment is necessary to ensure the pLWRP stock exclusion rules continue to function with the additions in Variation 1 to give effect to the Cultural Landscape/Values Management Area rules. Christchurch City Council submitted in support of the amendments to Rule 5.69 of the pLWRP. No other submissions were received. No amendments are recommended.

Recommendation R 5.69

Retain addition to Rule 5.69 without amendment.

Submissions on pLWRP Stock Exclusion Rules

17.25 There are a small number of submissions that have been lodged that relate to the stock exclusion rules in the proposed Land and Water Regional Plan, which are not the subject of Variation 1.

17.26 Four submissions, from C McArthur, A McArthur, H McArthur and H Clouston, request changes to pLWRP Rule 5.68, which relates to stock exclusion from waterways in the hill and high country. Stock exclusion in the hill and high country is not a matter covered by Variation 1.

17.27 It is possible that a specific rule could be included in Variation 1 for the Selwyn Te Waihora sub-regional area, in order to provide some remedy for these parties. However, their decision requested relates specifically to rules within the pLWRP, and generally requests amendments to Rule 5.68 as indicated below:

> *5.68 The use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water is a permitted activity, provided the following conditions are met:*

[238] Various, including V1pLWRP-1048 - Lake Ellesmere Dairy Farmers Group, V1pLWRP-1237 - Fonterra and V1pLWRP-582 - Beef + Lamb NZ.

1. …

2. …

3. The use or disturbance of the bed (including the banks) of a lake or river and any associated discharge to water that is not at a permanent stock crossing point does not result in:

(a) conspicuous pugging or de-vegetation that exposes clearly visible bare earth in the bed (including the banks) of a lake or river; or

(b) a conspicuous change in colour or clarity of the water, outside the Mixing Zone; or

~~*(c) cattle standing in any lake or river; and*~~

4. …

17.28 It is possible to include a specific version of this rule for the Selwyn Te Waihora sub-regional area. However, the wider issue is recognised, particularly in respect of the hill and high country, and Federated Farmers has lodged an appeal on the pLWRP decisions regarding this matter.

17.29 Overall, it is considered that these submissions are not on Variation 1.

18 Drains

Rule 5.164

18.1 Rule 5.164 reads follows:

> *5.164 The introduction or planting of any plant, or the removal or disturbance of existing vegetation in, on or under the bed of a lake or river that does not comply with one or more of the conditions 1, 3 or 5 to 7 of Rule 5.163, <u>excluding conditions 2 and 4,</u> is a restricted discretionary activity.*

18.2 Christchurch City Council submitted in support of the amendment to Rule 5.164 of the pLWRP. No other submissions were received. No amendments are recommended.

Recommendation R 5.164

Retain Rule 5.164 without amendment.

Rule 11.5.21

18.3 Rule 11.5.21 states:

> *11.5.21 Within the Selwyn Waihora catchment Regional Rule 5.77 shall include the following additional condition:*
>
> *1. The discharge is not within the Lake Area in the Cultural Landscape/Values Management Area.*

18.4 Rule 5.77 states:

> *5.77 The discharge of water that may contain contaminants from sub-surface or surface drains into a river, lake or wetland is a permitted activity, provided the following conditions are met:*
>
> *1. The discharge of land drainage water is only from a drainage system, the full spatial extent of which existed at 3 July 2004; and*
>
> *2. The concentration of:*
>
> *(a) total suspended solids in the discharge does not exceed 50 g/m^3; and*
>
> *(b) un-ionised hydrogen sulphide in the discharge does not exceed 0.005 g/m^3; and*
>
> *3. The discharge, beyond the Mixing Zone as defined in Schedule 5, does not:*
>
> *(a) produce conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or*
>
> *(b) produce any conspicuous change in the colour or visual clarity; or*
>
> *(c) produce any emission of objectionable odour; and*
>
> *4. The discharge does not:*
>
> *(a) occur within a Group or Community Drinking-water Protection Zone as set out in Schedule 1; or*
>
> *(b) contain any hazardous substance.*

18.5 A large number of submissions were received on Rule 11.5.21. Two submissions were received in support from NZ King Salmon and Te Taumutu Rūnanga. A number of submitters request amendments to or deletion of the Rule.

18.6 M Manson seeks to amend the requirement for resource consent and requests a precise definition of "drain" to which this rule applies.

18.7 Dr Whale seeks to amend Rule 11.5.21 so that:

1. Low stock density and small scale drains are not required to be fenced;
2. Current drainage systems may be retained and maintained;
3. It recognises that in flood prone areas nutrient management is on the basis of 'best endeavour' as there is no ability to control incoming flows;
4. It recognises that reclaimed land around the lake has potentially high nutrient levels - including common salt. Drainage water from that land will therefore be high in those contaminants even when there is no additional nutrient applied to the land.

18.8 Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks to amend Rule 11.5.21 by removing the "lake area" from Condition 1: *The discharge is not within the ~~Lake Area~~ in the Cultural Landscape/Values Management Area.*

18.9 M & N Dulieu seeks to amend Rule 11.5.21 so that all sub-surface and surface drains discharging into a river or lake be included in the farm environment plan as a permitted activity to limit the number of resource consents needed.

18.10 Federated Farmers seeks to delete Rule 11.5.21 (1) and replace with the following:

1. In the Lake Area in the Cultural Landscape/Values Management Area in the Selwyn-Te Waihora Catchment the discharge is provided for within a land drainage management plan approved by the Chief Executive of Environment Canterbury.

18.11 Selwyn DC, D Hasson, B & A Moir, J Greenslade, Ellesmere Irrigation Society Inc, Lochlea Farming Co Ltd, Lake Ellesmere Dairy Farmer Group, Fonterra, Halswell Drainage District Liaison Committee, and Dairy NZ request that Rule 11.5.21 be deleted. The submitters generally request a new permitted activity rule for land drainage.

18.12 17.12 Dairy NZ and Fonterra seek amendments to Schedule 7 of the pLWRP to meet their concerns. The submitters seek to insert a new section 4A into Schedule 7 as follows:

4A. For farms located with the Lake Area in the Cultural Landscape/Values Management Area, particular regard must be had to assessing risks of contaminants entering to drains that discharge to Lake Ellesmere/Te Waihora.

18.13 The submissions in opposition to this Rule are extensive and outline a number of practical difficulties with its implementation. Essentially, the Rule will require resource consenting of all existing land drainage systems that pass through the Cultural Landscape/Values Management Area before entering Lake Ellesmere/Te Waihora. The submitters have highlighted that there are a great many of these systems being either modifications of

existing natural drainage paths or drainage systems introduced into this low lying and relatively flat landscape. These submitters consider that the requirement for resource consent for the existing systems is unreasonable and unworkable for a number of reasons, including:

- The systems are a mixture of private and public drainage systems which typically drain several properties. Particularly for private drains, there is no ability for the consent holder at the "end of the system" to manage the quantity or quality of the water being drained.
- To require the land owner at the end of the system to hold the discharge permit that benefits a number of other parties is inequitable.
- Should the person at the end of the system not seek resource consent, the individual discharges into the existing system are of uncertain status.
- The extent of the land drainage systems are not mapped or, in some cases, not easily discernable on the ground.

18.14 While there is some support for the Rule, and a request that it be extended to cover drainage into rivers that pass through the Cultural Landscape/Values Management Area, the practical difficulties of making the Rule work effectively and the inherent compliance and equity issues with private drainage networks are considerable difficulties. On this basis, it is recommended that Rule 11.5.21 be deleted, and the requirement for managing these systems be included within the requirements for farm environment plans.

Recommendation R11.5.21

Delete Rule 11.5.21[239]

Amend Schedule 7 to insert a new section 4A into Schedule 7 of the pLWRP as follows:

4A. For farms located with the Lake Area in the Cultural Landscape/Values Management Area, and where there are one or more drains on or adjacent to the property that ultimately discharge to Lake Ellesmere/Te Waihora, an assessment of the risks of contaminants entering the drains, and the management techniques to be used to avoid or reduce the contaminants entering the drains.[240]

[239] Various, including V1pLWRP-528 - Selwyn DC; V1pLWRP-609 - D Hasson; V1pLWRP-556 - B & A Moir; and V1pLWRP-558 – J Greenslade.

[240] V1pLWRP-1371 - Dairy NZ; V1pLWRP-1321 Fonterra.

19 West Melton Special Zone

19.1 In the West Melton Special Zone, conditions have historically been added to resource consents to manage groundwater abstraction and well interference effects in the Zone. The pressure on groundwater abstraction is exacerbated by large-scale development of rural-residential properties and associated small water takes.

19.2 West Melton Special Zone straddles the Christchurch-West Melton and Selwyn-Waihora Sub-regional areas and has specific policies, rules, definitions, tables and maps directly focussed on management of the water resource within the Zone. Ten submitters request decisions on the West Melton Special Zone covering the retention of the Zone, the removal of the zone and amendments to the policies and rules.

19.3 I & CM McIndoe Partnership submits on all the policies, rules and definitions in Section 9 – Christchurch-West Melton. I & CM McIndoe Partnership opposes the West Melton Special Zone and requests the deletion of all policies, rules and definitions referring to the Zone. To avoid repetition, the I & CM McIndoe Partnership submission is considered here, at the outset, and is identified, but not discussed, under each individual provision.

19.4 The effect of the West Melton Special Zone is described in the introductory text for this section of Variation 1 (see below). It is noted that the West Melton Special Zone has existed for many years and has been implemented partly through the Transitional Regional Plan and more recently through CRC's resource consent processing practice. In effect, formalising the West Melton Special Zone in the pLWRP gives statutory weight to the Zone and the inherent groundwater restrictions.

19.5 The Pattle Delamore Partners Ltd report on the West Melton Special Zone[241] concludes that the Zone is a beneficial management strategy that restricts takes to maintain groundwater levels for domestic use. That said, there are alternative mechanisms for water management the West Melton Special Zone, such as reliance on interference effects assessments. However, any alternative would be a substantial change to the established management regime and require a review of the water permits in the Zone, based on additional technical research.

19.6 The CRC obtained further technical advice from Howard Williams to answer questions related to I & CM McIndoe Partnership's submission (full response from Dr Williams attached as Appendix D). Mr Williams supported the West Melton Special Zone restrictions. In summary, Mr Williams comments that he supports the formalising of the Zone, as the Zone is a justified management tool to reduce localised adverse effects. Once the pLWRP and Variation 1 become operative and adverse effects on groundwater are generally in decline as a result of an improved water balance, it may then be appropriate to review management of the West Melton Special Zone.

[241] Pattle Delamore Partners Ltd (2011), Technical review of the effectiveness of the existing groundwater management regime operation in the West Melton Special Zone, CRC Report No. R11/125.

19.7 Overall, the request of the I & CM McIndoe Partnership to delete the West Melton Special Zone is recommended to be rejected.

Introduction

19.8 The following text is an addition to the introduction before Section 9.1:

The West Melton Special Zone is a defined area where there is a high density of bores and has in the past seen significant groundwater development for irrigation. To protect bores used for domestic, stock water and community water supply from interference effects and impacts on reliability, the special management regime operating in this area since the early 1990s is formalised in this section of this Plan.

The regime has two elements. Firstly, restrictions are applied to groundwater abstractions in the West Melton, Yaldhurst and Weedons area when groundwater levels are low. The restrictions do not apply to water takes less than 10 m^3 and takes for community water supply. Secondly, Regional rules permitting the abstraction of between 10 m^3 and 100 m^3 per day of groundwater on properties greater than 20 ha without the need for resource consent do not extend to the West Melton Special Zone.

19.9 Canterbury Aggregate Producers Group and Selwyn DC request the retention of the introductory text with no amendments.

Recommendation R WMSZ Introduction

That the introduction before Section 9.1 be retained without amendment.

9.1A Definitions

19.10 The following text is an addition to Section 9:

9.1A Christchurch-West Melton Section Definitions
For this sub-regional section of the Plan the following definitions apply in addition to the definitions contained in Section 2.10.

19.11 Horticulture NZ addresses a minor correction in the amendments to the definitions in Section 11. Consequently, the same issue has been identified in these definitions. The minor correction is to provide for consistency with the decisions version of the pLWRP.

Recommendation R 9.1A

That the introductory text to section 9.1A be amended as follows:

9.1A Christchurch-West Melton Section Definitions
For this sub-regional section of the Plan the following definitions apply in addition to the definitions contained in Section 2.9~~10~~[242].

Definitions – West Melton Special Zone

19.12 The definition of West Melton Special Zone is provided in both section 9.1A Christchurch-West Melton Section Definitions and section 11.1A Selwyn-Waihora Definitions, and reads as follows:

West Melton Special Zone means the area bounded by Intake Road, Station Road, Hoskyns Road through to Main South Road, Carmen Road, Russley Road, Ryans Road, Guys Road and a line 1,000 metres north of, and parallel to, the Old West Coast Road as shown on the Planning Maps.

19.13 The definition of West Melton Special Zone received two submissions. I & CM McIndoe Partnership oppose the definition and Canterbury Aggregate Producers Group request the retention of the definition.

19.14 The definition identifies the spatial extent of the zone, and due to the technical advice discussed in the introduction (above) no amendments are recommended.

Recommendation R 9.1A – West Melton Special Zone

Retain 9.1A West Melton Special Zone definition without amendment.

Policy 9.4.8

19.15 Policy 9.4.8 is an addition to Section 9.4 and reads:

9.4.8 Protect the reliability of groundwater takes for domestic and stock water use and community water supply in the West Melton Special Zone, by requiring groundwater abstractions greater than 10 m³ per day to comply with the groundwater level restrictions in section 9.6.2.

19.16 Policy 9.4.8 received five submissions. J Townshend and I & CM McIndoe Partnership submit in opposition; Canterbury Aggregate Producers Group requests retention of the Policy without amendment; one submitter seeks to retain Policy 9.4.8 with amendments and another submitter seeks clarification on the definition of community water supply, as discussed below.

19.17 The Selwyn DC seeks amendments to Policy 9.4.8 to provide for community water supplies to not require compliance with groundwater level restrictions when community water supply abstractions are greater than 10 m³ per day.

[242] V1pLWRP-1386 - Horticulture NZ

19.18 The requested amendment is consistent with the pLWRP (decisions version) Policy 4.49 which reads:

> *4.49 Enable the taking of water for a community drinking-water supply by not requiring compliance with any minimum or residual flow or partial restriction conditions and the environmental flow and allocation regime or groundwater allocation limit provided a water supply strategy is in place and the water supply is so managed as to restrict the use of water from those supplies during periods of low flow or water levels.*

19.19 Islington Park Limited requests clarification of the definition of community water supply. The submitter requests amendments to the definition to include commercial and industrial use for the purpose of their Business Park.

19.20 For the purpose of clarification for this submitter, the pLWRP defines "community water supply" as:

"Community water supply means water taken primarily for group drinking-water supply and includes group drinking-water supply, and community drinking-water supply, but that may also be used for other purposes such as supply to institutional, industrial, processing, stockwater, or amenity irrigation use and fire-fighting activities."

19.21 It is considered that the potable water supply for individual projects is better addressed at the time of resource consent for individual projects such as the Waterloo Business Park Limited, rather than through specific provisions in the Plan.

19.22 Overall, the policy maintains the special management approach of the West Melton Special Zone and provides for domestic supply whilst restricting large water takes.

Recommendation R 9.4.8

That the Policy 9.4.8 be amended as follows:

> *9.4.8 Protect the reliability of groundwater takes for domestic and stock water use and community water supply in the West Melton Special Zone, by requiring groundwater abstractions greater than 10 m³ per day, other than community water supplies,*[243] *to comply with the groundwater level restrictions in section 9.6.2.*

[243] V1pLWRP-509 - Selwyn District Council

Rule 9.5.10

19.23 Rule 9.5.10 is an addition to Section 9.5 and reads:

> *9.5.10 Within Christchurch West Melton, Regional Rule 5.114 shall include the following additional condition:*
>
> *1. The take is not within the West Melton Special Zone.*

19.24 Rule 9.5.10 received four submissions. I & CM McIndoe Partnership, Canterbury Aggregate Producers Group and J. Townshend state their opposition to the Rule and request that Rule 9.5.10 be deleted. Christchurch City Council submits in support. The opposing submitters are primarily concerned about the additional restrictions and that there is no justification in the Section 32 Report for the removal of small water takes as a permitted activity.

19.25 Small water takes less than 10 m^3 are permitted, in order to provide for domestic use and stock water. The justification for maintaining the existing regime is a precautionary approach as the area is historically a 'hot spot' for bore interference and the consequences of allowing the taking of 100 m^3/day are uncertain.

19.26 Considering that one of the aims of the West Melton Special Zone management regime is to provide water for domestic and stock water use, the permitted 10 m^3 is sufficient to allow for this use in most circumstances. Any abstractions exceeding this limit appropriately require resource consent to enable an understanding of any bore interference effects, any implications for the allocation limits, efficiency of use and to implement the level restrictions.

Recommendation R 9.5.10

That Rule 9.5.10 be retained without amendment.

Rule 9.5.11

19.27 Rule 9.5.11 is an addition to Section 9.5 and reads:

> *9.5.11 Within Christchurch West Melton, Regional Rule 5.128 shall include the following additional condition:*
>
> *1. Any take within the West Melton Special Zone complies with the groundwater level restrictions in section 9.6.2.*

19.28 Rule 9.5.11 received three submissions. I & CM McIndoe Partnership opposes the Rule. Canterbury Aggregate Producers Group submits in support.

19.29 Nga Rūnanga and Te Rūnanga o Ngāi Tahu submits in support and seeks inclusion of a new condition to the Rule.

19.30 The submission is lodged on the basis that the proposal to amend Rule 9.5.11 is intended to introduce a matter over which discretion is restricted. The submitter seeks that the amendment be a condition of the restricted discretionary activity rule. The proposal to amend the Rule does in fact introduce an additional condition to the restricted discretionary activity Rule, so the relief sought is met, without further amendment.

19.31 For clarity, Rule 5.128 of the pLWRP will read:

"5.128 The taking and use of groundwater is a restricted discretionary activity, provided the following conditions are met:

1. *The take is from within a Groundwater Allocation Zone on the Planning Maps; and*
2. *Unless the proposed take is the replacement of a lawfully established take affected by the provisions of section 124-124C of the RMA, for stream depleting groundwater takes, the take, in addition to all existing consented surface water takes, does not result in any exceedance of any environmental flow and allocation limits set in Sections 6 to 15 for that surface water body in accordance with Schedule 9; and*
3. *Unless the proposed take is the replacement of a lawfully established take affected by the provisions of section 124-124C of the RMA, the seasonal or annual volume of the groundwater take, in addition to all existing consented takes, as determined by the method in Schedule 13 does not exceed the groundwater allocation limits for the relevant Groundwater Allocation Zone in Sections 6 to 15; and*
4. *The bore interference effects are acceptable, as determined in accordance with Schedule 12; and*
5. *Any take within the West Melton Special Zone complies with the groundwater level restrictions in section 9.6.2".*

19.32 As discussed in the introduction of this section, the inclusion of the West Melton Special Zone in Variation 1 formalises an existing effective and appropriate planning regime.

Recommendation R 9.5.11

That Rule 9.5.11 is retained without amendment.

Groundwater Level Restrictions in the West Melton Special Zone

19.33 The following text is an addition to Section 9.6.2 Groundwater Allocation Limits:

Groundwater Level Restrictions in the West Melton Special Zone

When groundwater levels fall below the specified water levels in the nominated monitoring bores the following reductions in the volume of water available for abstraction are to be applied to groundwater abstractions in the West Melton Special Zone. The restrictions do not apply to takes less than 10 m³ and takes for community water supply permitted under this Plan.

Monitoring Bore	*Topo 50 Map Reference*	*Sub-zone*	*Depth to Water Below Measuring Point**		
			*Rate and Volume** Reduced by 33%*	*Rate and Volume** Reduced 66%*	*Water Take ceases*
M35/1000	*BX23:45121-80372*	*WGA01*	*40.30*	*43.80*	*47.30*
M35/1110	*BX23:59780-81098*	*WGA02*	*17.55*	*19.05*	*20.45*
M35/1691	*BX23:53532-82027*	*WGA03*	*19.00*	*21.50*	*24.00*
M35/5696	*BX23:49524-79842*	*WGA04*	*27.74*	*28.24*	*28.64*
M36/0217	*BX23:52919-75261*	*WGA05*	*20.10*	*21.90*	*23.60*

* *The Measuring Point is the reference point on the well where measurements are taken from as recorded in the Wells Database held by Canterbury Regional Council.*

** *The rate and volume to be reduced is that authorised by a resource consent.*

19.34 Section 9.6.2 received four submissions. Selwyn DC, Christchurch City Council, and Canterbury Aggregate Producers Group submits in support; and I & CM McIndoe Partnership submit in opposition.

19.35 The Selwyn DC requests that Section 9.6.2 be consistent with Policy 9.4.8 and consequently requests amendments to Section 9.6.2, to include community water supplies as exempt from water take restrictions. This amendment is reasonable as discussed in the analysis of Policy 9.4.8.

19.36 Christchurch City Council seeks amendments to Section 9.6.2 to either of the following: "When groundwater levels fall below the specified water levels in <u>any [of]</u> the nominated monitoring bores..." or "When groundwater levels fall below the specified water levels in <u>all</u> the nominated monitoring bores....'

19.37 The clarification requested in the Christchurch City Council submission is an appropriate change in regards to the West Melton Special Zone Sub-zones to identify the relevant monitoring bores. Taking this change into account, the wording provided by Christchurch City Council does not adequately identify what monitoring bores are being referred to. The following wording is recommended:
"When groundwater levels fall below the specified water levels in the ~~nominated~~ <u>relevant</u> monitoring bores <u>for each sub zone</u>..."

19.38 This change identifies the sub zones, so that trigger levels in one sub zone do not affect the triggers in another sub zone. This wording meets the submitter's request for clarification.

19.39 Canterbury Aggregate Producers Group requests Section 9.6.2 be retained, subject to groundwater takes for "other activities" within the Christchurch-West Melton Zone being allowed as a restricted discretionary activity. The submitter discusses in its submission that the rules differ to those for the pLWRP Christchurch-West Melton Zone.

19.40 While the rule framework of the West Melton Special Zone differs from the Christchurch-West Melton Zone, the practical outcomes remain the same. Both the Selwyn-Te Waihora and Christchurch-West Melton catchments are over-allocated and as a result new takes are prohibited, in part to give effect to the NPSFM. The NPSFM aims *"to avoid any further over-allocation of fresh water and phase out existing over-allocation"* "*by every regional council ensuring that no decision will likely result in future over-allocation".* Therefore to give effect to the NPSFM, it is recommended that the rules remain. If the catchments were not over allocated new takes would be restricted discretionary activities provided associated conditions are met.

19.41 The Canterbury Aggregate Producers Group also maintains its support of the Rule is subject to exempting the aggregates industry from the groundwater level restrictions. At this point, it is uncertain what the justification would be to exempt any industry from the management framework set out in Variation 1. The resource consent process is the appropriate process for groundwater management, considering the over-allocation of the catchment.

Recommendation R9.6.2

That Section 9.6.2 be amended as follows:

Groundwater Level Restrictions in the West Melton Special Zone

When groundwater levels fall below the specified water levels in the ~~nominated~~ relevant monitoring bores for each sub zone[244] *the following reductions in the volume of water available for abstraction are to be applied to groundwater abstractions in the West Melton Special Zone. The restrictions do not apply to takes less than 10 m³ permitted under this Plan and to takes for community water supply ~~permitted under this Plan~~.*[245]

Monitoring Bore	*Topo 50 Map Reference*	*Sub-zone*	*Depth to Water Below Measuring Point**		
			*Rate and Volume** Reduced by 33%*	*Rate and Volume** Reduced 66%*	*Water Take ceases*
M35/1000	*BX23:45121-80372*	*WGA01*	*40.30*	*43.80*	*47.30*
M35/1110	*BX23:59780-81098*	*WGA02*	*17.55*	*19.05*	*20.45*
M35/1691	*BX23:53532-82027*	*WGA03*	*19.00*	*21.50*	*24.00*

[244] V1pLWRP-939 – Christchurch City Council
[245] V1pLWRP-511 – Selwyn DC

M35/5696	*BX23:49524-79842*	*WGA04*	*27.74*	*28.24*	*28.64*
M36/0217	*BX23:52919-75261*	*WGA05*	*20.10*	*21.90*	*23.60*

* *The Measuring Point is the reference point on the well where measurements are taken from as recorded in the Wells Database held by Canterbury Regional Council.*

** *The rate and volume to be reduced is that authorised by a resource consent.*

Policy 11.4.33

19.42 Policy 11.4.33 is an addition to Section 11 of the pLWRP and reads:

11.4.33 Protect the reliability of groundwater takes for domestic and stock water use and community water supply in the West Melton Special Zone by requiring groundwater abstractions greater than 10 m³ per day to comply with the groundwater level restrictions in Table 11(h).

19.43 Four submissions were received on Policy 11.4.33. Canterbury Aggregate Producers Group and Christchurch City Council request Policy 11.4.33 be retained. Selwyn DC requests amendments, and J Townshend requests that Policy 11.4.33 be deleted.

19.44 The Selwyn DC seeks amendments to Policy 11.4.33 to provide for community water supplies to not require compliance with groundwater level restrictions when abstractions are greater than 10 m³ per day.

19.45 This amendment is discussed in the analysis of Policy 9.8.9. Policy 11.4.33 is recommended to be amended to provide consistency.

Recommendation R11.4.33

That Policy 11.4.33 be amended as follows:

11.4.33 Protect the reliability of groundwater takes for domestic and stock water use and community water supply in the West Melton Special Zone by requiring groundwater abstractions greater than 10 m³ per day, <u>other than community water supplies</u>,[246] to comply with the groundwater level restrictions in Table 11(h).

Rule 11.5.31

19.46 Rule 11.5.31 reads:

11.5.31 Within the Selwyn Waihora catchment Regional Rule 5.114 shall include the following additional condition:

1. The take is not within the West Melton Special Zone.

[246] V1pLWRP-523 - Selwyn DC

19.47 Rule 11.5.31 received four submissions. Canterbury Aggregate Producers Group and Christchurch CC seek that the rule is retained and J. Townshend and I & CM McIndoe Partnership request the rule be deleted.

19.48 The analysis of these points and the recommendation is discussed above under Rule 9.5.10, and is adopted here.

Recommendation R11.5.31

That Rule 11.5.31 be retained without amendment.

Table 11(h)

19.49 Table 11(h) states:

Table 11(h): Groundwater Level Restrictions in the West Melton Special Zone

The following reductions in the volume of water taken are to be applied to consented groundwater abstractions in the West Melton Special Zone as shown on the Planning Maps when groundwater levels fall below the specified water levels in the nominated monitoring bores. The restrictions do not apply to takes less than 10m^3 and takes for community water supply permitted under this Plan.

Monitoring Bore	*Topo 50 Map Reference*	*Sub-zone*	*Depth to Water Below Measuring Point**		
			*Rate and Volume** Reduced by 33%*	*Rate and Volume** Reduced 66%*	*Water Take ceases*
M35/1000	*BX23:45121-80372*	*WGA01*	*40.30*	*43.80*	*47.30*
M35/1110	*BX23:59780-81098*	*WGA02*	*17.55*	*19.05*	*20.45*
M35/1691	*BX23:53532-82027*	*WGA03*	*19.00*	*21.50*	*24.00*
M35/5696	*BX23:49524-79842*	*WGA04*	*27.74*	*28.24*	*28.64*
M36/0217	*BX23:52919-75261*	*WGA05*	*20.10*	*21.90*	*23.60*

* *The Measuring Point is the reference point on the well where measurements are taken from as recorded in the Wells Database held by Canterbury Regional Council.*

** *The rate and volume to be reduced is that authorised by a resource consent.*

19.50 Six submitters request decisions on Table 11(h). These included Selwyn District Council and Canterbury Aggregate Producers Group who request retention of the table. I & CM McIndoe Partnership, Royal New Zealand Forest and Bird Protection Society, Islington Park Ltd and Horticulture NZ submit in opposition.

19.51 Table 11(h) is a repeat of the Groundwater Level Restrictions in the West Melton Special Zone table in Section 9.6.2. Table 11(h) received some additional submissions, including from Forest and Bird, Islington Park Ltd, and Horticulture NZ.

19.52 Islington Park Ltd request clarification of the definition of community water supply. The definition is discussed in the analysis of Policy 9.4.8.

19.53 Horticulture NZ requested that all the tables in Variation 1 be reconsidered. Reviewing the submission in detail reveals nothing in particular that relates to this table and that requires further discussion.

19.54 The Forest and Bird position on the data in Table 11(h) is discussed in its submission as "reserved until Forest & Bird has had time to consider them in some detail and seek advice on the extent to which it can rely on them protecting the significant natural values within the Catchment". As the submitter has not requested a decision on the table no recommendations can be given.

19.55 To provide for consistency between the tables in Section 9 and Section 11 the decision requested by Christchurch City Council on Section 9.6.2 has been considered in this recommendation.

Recommendation R Table 11(h)

Table 11(h): Groundwater Level Restrictions in the West Melton Special Zone

When groundwater levels fall below the specified water levels in the ~~nominated~~ relevant monitoring bores for each sub zone[247] the following reductions in the volume of water available for abstraction are to be applied to groundwater abstractions in the West Melton Special Zone. The restrictions do not apply to takes less than 10 m³ permitted under this Plan and to takes for community water supply ~~permitted under this Plan.~~[248]

Monitoring Bore	*Topo 50 Map Reference*	*Sub-zone*	*Depth to Water Below Measuring Point**		
			*Rate and Volume** Reduced by 33%*	*Rate and Volume** Reduced 66%*	*Water Take ceases*
M35/1000	*BX23:45121-80372*	*WGA01*	*40.30*	*43.80*	*47.30*
M35/1110	*BX23:59780-81098*	*WGA02*	*17.55*	*19.05*	*20.45*
M35/1691	*BX23:53532-82027*	*WGA03*	*19.00*	*21.50*	*24.00*
M35/5696	*BX23:49524-79842*	*WGA04*	*27.74*	*28.24*	*28.64*
M36/0217	*BX23:52919-75261*	*WGA05*	*20.10*	*21.90*	*23.60*

* *The Measuring Point is the reference point on the well where measurements are taken from as recorded in the Wells Database held by Canterbury Regional Council.*

** *The rate and volume to be reduced is that authorised by a resource consent.*

[247] V1pLWRP-939 – Christchurch City Council
[248] V1pLWRP-540 – Selwyn DC

Map 5

19.56 One submission was received that relates to the Selwyn – Te Waihora Map Series. I & CM McIndoe Partnership's submission relates to the map, and the submitter requests the removal of the Special Zone.

19.57 As stated in the introduction, the West Melton Special Zone is beneficial for water management in the zone due to the unique conditions and management history. It is recommended that the West Melton Special Zone, including Map 5, be retained.

Recommendation R Map 5

Retain without amendment.

20 Halswell River/Huritini Catchment Flooding

20.1 The Halswell River/Huritini catchment is recognised as being particularly vulnerable to flooding. The catchment is currently managed by the Canterbury Regional Council under the "Halswell Drainage Scheme". Variation 1 includes policies and rules that require all new stormwater discharges to be either authorised under a stormwater management plan or a resource consent to manage additional flood risk.

20.2 It is also noted that this catchment extends from the Selwyn Te Waihora sub-regional area into the Christchurch-West Melton sub-regional area, and there is a need for consistency in the policies and rules between these two sections of the pLWRP.

Definition: Halswell River/Huritini Catchment

20.3 A definition of Halswell River/Huritini Catchment is provided in section 9.1A (Definitions) of the Christchurch-West Melton Section and section 11.1A (definitions) Selwyn – Te Waihora Section, and reads:

Halswell River/Huritini Catchment means the catchment area identified as the Halswell catchment on the Planning Maps.

20.4 No submissions were received on this definition. Consequently, no changes are recommended.

Recommendation R 9.1A - Halswell River/Huritini Catchment and R 11.1A - Halswell River/Huritini Catchment

Retain without amendment.

Policy 9.4.9

20.5 Policy 9.4.9 reads:

9.4.9 To prevent any increase in inundation of land in the Halswell River/Huritini catchment, the discharge to surface water of any stormwater in the Halswell River/Huritini catchment that is not within an area covered by a consented stormwater management plan will require specific evaluation, including of downstream flooding potential, through a resource consent process.

20.6 Policy 9.4.9 received several submissions. Lansdowne Environmental Issues Society Inc, R Long, I Duff, Selwyn DC, Christchurch City Council, J Bassett, and D & P Foster Family Trust seek to retain Policy 9.4.9. The Halswell Drainage District Liaison Committee requests amendments, as discussed below.

20.7 The Halswell Drainage District Liaison Committee seeks to amend Policy 9.4.9 to include consideration of the discharge of groundwater to surface water.

20.8 In this catchment there are some drainage systems that inherently convey a mixture of groundwater, drainage water and stormwater. While these systems are covered by Region-wide Policies 4.13 and 4.17 and Rules 5.75-5.80, it is appropriate that the policy covers all discharges into the catchment that may have an impact on flood risk, in order to promote the integrated management of the flood risk. If there are some other discharges of groundwater that are not captured by this policy and rule framework, the submitter is invited to highlight this at the hearing.

20.9 D & P Foster Family Trust requests that discharge consent applications be required to be notified "at least to affected parties". This is addressed below in the assessment of Rule 9.5.12.

20.10 The Selwyn DC seeks to retain Policy 9.4.9, requests clarification on "consented stormwater management plan" and asks if the definition applies to both current and future consented stormwater management plans.

20.11 The intent of the policy is to require consent for all stormwater discharged into the Halswell River/Huritini catchment, and it does not have a time limitation. Therefore it covers both current discharge consents and any granted in the future, including for future stormwater management plans.

20.12 Policy 9.4.9 gives effect to objectives and policies in the pLWRP including Objective 3.21, which states:

"The risk of flooding or erosion of land or damage to structures is not exacerbated by the diversion of water, erection, placement or failure of structures, the removal of gravel or other alteration of the bed of a lake or river or the removal of vegetation or natural defences against water does not exacerbate the risk of flooding or erosion of land or damage to structures."

20.13 In addition, Policy 4.17 states:

"Stormwater run-off volumes and peak flows are managed so that they do not cause or exacerbate the risk of inundation, erosion or damage to property or infrastructure downstream or risks to human safety."

Recommendation R9.4.9

That Policy 9.4.9 be amended as follows:

9.4.9 To prevent any increase in inundation of land in the Halswell River/Huritini catchment, the discharge to surface water of any stormwater or drainage water[249] in the Halswell River/Huritini catchment that is not within an area covered by a consented stormwater management plan will require specific evaluation, including of downstream flooding potential, through a resource consent process.

Rule 9.5.12

20.14 Rule 9.5.12 reads:

9.5.12 The discharge of stormwater into a river, lake, wetland or artificial watercourse or onto or into land in circumstances where a contaminant may enter a river, lake, wetland or artificial watercourse in the Halswell River/Huritini catchment that is not authorised by a consented stormwater management plan and the discharge did not occur before 5 December 2013, is a discretionary activity.

20.15 Rule 9.5.12 received several submissions. R Long, D & P Foster Family Trust, Lansdowne Environmental Issues Society Inc, I Duff, Christchurch City Council, and J Bassett submitted in support. The Halswell Drainage District Liaison Committee submission on Policy 9.4.9 is also relevant. The support shown by submitters is noted.

20.16 Rule 9.5.12 is required to implement Policy 9.4.9 and responds to a well-known flooding problem in the area, which would be exacerbated by unmanaged additional stormwater discharges. The requirement of discretionary activity resource consent promotes the preparation of stormwater management plans to avoid the requirement for individual discharge consents.

20.17 D & P Foster Family Trust requests that consent applications should be required to be notified at least to affected parties.

20.18 Section 95A(c) of the RMA states that a consent authority must publicly notify an application if *"a rule or national standard requires public notification of the application"*. Therefore, the RMA allows for the use of a rule to require full public notification. There is no provision in the RMA providing for a rule for limited notification of resource consent applications to "affected parties".

20.19 While the submitter's request could be achieved by a rule requiring public notification, the costs and time issues associated with publically notifying all stormwater consent applications needs to be taken into account – is it an effective an efficient way of achieving the objectives

[249] V1pLWRP-1585 Halswell Drainage District Liaison Committee

of the pLWRP? As the rules require all discharges, no matter how minor, and irrespective of how well any effects are mitigated, to be authorised by resource consent, a requirement for full notification may be quite onerous. Overall, such a rule is not recommended as section 95A of the RMA provides adequate opportunity to identify affected parties and provide the opportunity for input into decision-making.

20.20 The submission made by Halswell Drainage District Liaison Committee on Policy 9.4.9 is also relevant to Rule 9.5.12. However, it is noted that Rule 5.77 of the pLWRP requires resource consent for all new or extended land drainage system discharges, and will integrate well with Rule 5.9.12.

Recommendation R 9.5.12

That the Rule 9.5.12 be retained without amendment.

Policy 11.4.34

20.21 Policy 11.4.34 reads:

11.4.34 To prevent any increase in inundation of land in the Halswell River/Huritini catchment, the discharge to surface water of any stormwater in the Halswell River/Huritini catchment that is not within an area covered by a consented stormwater management plan will require specific evaluation, including of downstream flooding potential, through a resource consent process.

20.22 Policy 11.4.34 received several submissions, many of which also submitted on Policy 9.4.9. D & P Foster Family Trust, Lansdowne Environmental Issues Society Inc, R Long, I Duff, J Bassett and Selwyn DC request retention of the policy without amendments. The Christchurch City Council and the Halswell Drainage District Liaison Committee request amendments, as discussed below.

20.23 The Halswell Drainage District Liaison Committee seeks to amend Policy 11.4.34 to also include consideration of the discharge of groundwater to surface water. This is discussed in the analysis of Policy 9.4.9.

20.24 Christchurch City Council requests an amendment so that the policy reads *"To prevent any increase in inundation (excluding inundation related to stormwater treatment) of land in the Halswell River/Huritini catchment."*

20.25 The need for "inundation" in stormwater treatment and detention systems seems sufficiently obvious that specific provision in the policy is not necessary.

20.26 The Selwyn DC seeks to retain Policy 11.4.34, requests clarification on "consented stormwater management plan" and asks if the definition applies to both current and future consented plans.

20.27 As discussed with respect to Policy 9.4.9, the intent of the policy is to require consent for all stormwater discharged into the Halswell River/Huritini catchment, and it does not have a time limitation or other exclusions or limitations. Therefore, this policy covers both current discharge consents and any granted in the future, including for future stormwater management plans or in relation to the treatment of stormwater.

20.28 Policy 11.4.34, like Policy 9.4.9, gives effect to objectives and policies in the pLWRP, including Objective 3.21. Policies 9.4.9 and 11.4.34 provide for catchment-wide consistency within the Selwyn Te Waihora and the Christchurch-West Melton sections of the pLWRP

Recommendation R 11.4.34

11.4.34 To prevent any increase in inundation of land in the Halswell River/Huritini catchment, the discharge to surface water of any stormwater or drainage water[250] in the Halswell River/Huritini catchment that is not within an area covered by a consented stormwater management plan will require specific evaluation, including of downstream flooding potential, through a resource consent process.

Rule 11.5.29

20.29 Rule 11.5.29 is an addition to Section 11 of the pLWRP and reads:

11.5.29 The discharge of stormwater into a river, lake, wetland or artificial watercourse or onto or into land in circumstances where a contaminant may enter a river, lake, wetland or artificial watercourse in the Halswell River/Huritini catchment that is not authorised by a consented stormwater management plan and the discharge did not occur before 5 December 2013, is a discretionary activity.

20.30 Eight submissions were received on this Rule. R. Long, D & P Foster Family Trust, NZ King Salmon Limited, Lansdowne Environmental Issues Society Inc, I. Duff, Christchurch CC, and J. Bassett submit in support. The Halswell Drainage District Liaison Committee submission on Policy 11.4.34 is also relevant.

20.31 D & P Foster Family Trust requests that consent applications should be required to be notified at least to affected parties. This has been discussed above in relation to Rule 9.5.12 and the same conclusion applies.

20.32 Rules 9.5.12 and 11.5.29 need to be consistent between sub-regional sections of the pLWRP. The submissions made on both Rule 9.5.12 and Rule 11.5.29 highlight the appropriateness of these Rules to managing stormwater and flood potential in this catchment.

[250] V1pLWRP-1040 - Halswell Drainage District Liaison Committee

Recommendation R 11.5.29

That Rule 11.5.29 be retained without amendment.

21 Earthquake Recovery Activities

21.1 Canterbury Earthquake Recovery Authority's Land Use Recovery Plan inserted a chapter for the "Recovery and Rebuilding of Greater Christchurch" into the Canterbury Regional Policy Statement. The chapter provides a resource management framework for the recovery of Greater Christchurch, to enable and support earthquake recovery and rebuilding.

21.2 Policies 11.4.35-11.4.36 and Rules 11.5.46-11.5.47 were inserted into the Selwyn - Te Waihora section of the pLWRP to give effect to the RPS and to the Canterbury Earthquake Recovery Act 2011. Section 27 of the Canterbury Earthquake Recovery Act 2011 states that the Minister may *"by public notice, suspend, amend, or revoke the whole or any part of … an RMA document."* Policies and rules inserted are treated as operative immediately and are not subject to the ordinary First Schedule process. It is also noted that no submissions have been received on these policies and rules.

22 Definitions

22.1 The definitions in the Christchurch West Melton and Selwyn Te Waihora sub-regional sections of the pLWRP are in addition to the definitions contained in Section 2.9.

22.2 Most of the definitions in these sections are addressed in relation to the topic area under which they appropriately fall. The location of the assessment of each definition is as follows:

Definition	Location
Adaptive management conditions	Flows/Allocation
Augmentation	Flows/Allocation
Baseline land use	Nutrient and Sediment Management
Central Plains Water	Flows/Allocation
Cultivation	Nutrient and Sediment Management
Cultural Landscape/Values Management Area	Cultural Landscape/Values Management Area
Drainage Management Plan	Drains
Good Management Practice Nitrogen and Phosphorus Loss Rates	Nutrient and Sediment Management
Halswell River/Huritini catchment	Halswell River/Huritini catchment
Intensive winter grazing	Nutrient and Sediment Management
Selwyn Waihora catchment	Definitions
Soil moisture monitoring	Definitions
West Melton Special Zone	West Melton Special Zone

22.3 There are three definitions that do not fall into a particular topic above and therefore are assessed separately.

22.4 It is noted that no submissions have been received on the definition of "soil moisture monitoring", and accordingly no analysis of this definition is undertaken and it is recommended to be retained without amendment but shifted into Schedule 24, so that it has wider application if desired.

11.1a Introduction

22.5 The following text introduces the variations to section 2.9 of the pLWRP.

11.1a
For this sub-regional section of the Plan the following definitions apply in addition to the definitions contained in Section 2.10.

22.6 Horticulture NZ identifies incorrect numbering used in Variation 1 to refer to the definition section of the pLWRP. The submitter has helpfully highlighted a minor correction required to be consistent with the decisions version of the pLWRP.

Recommendation R 11.1a

That the introductory text be amended as follows:

For this sub-regional section of the Plan the following definitions apply in addition to the definitions contained in Section 2.~~10~~9[251].

Selwyn Waihora catchment

22.7 The following definition of "Selwyn Waihora catchment" is contained in the Selwyn Te Waihora section of Variation 1 and reads:

Selwyn Waihora catchment means the catchment area identified as the Selwyn Waihora catchment on the Planning Maps.

22.8 No submissions were received specifically on the definition. However, the general submission from Nga Rūnanga and Te Rūnanga O Ngāi Tahu, requesting all references to Selwyn-Waihora be changed to Selwyn Te Waihora is relevant and accordingly the definition is recommended to be altered accordingly (see full discussion elsewhere in this report).

Recommendation R 11.1a – Selwyn Te Waihora

Amend the definition to read:

Selwyn Te[252] *Waihora catchment means the catchment area identified as the Selwyn Te Waihora catchment on the Planning Maps.*

[251] V1pLWRP-1386 - Horticulture NZ
[252] V1pLWRP-362 - Nga Rūnanga and Te Rūnanga O Ngai Tahu, V1pLWRP-256 Te Taumutu Rūnanga

23 Miscellaneous

23.1 This part of the Section 42A Report provides an analysis of the miscellaneous submissions that do not directly fall under the previously discussed topics in the Report. This section of the Report generally discusses submissions made against the entire Variation, submissions seeking new policies and submissions that do not request specific decisions.

Submissions on the Variation as a whole

23.2 The Variation as a whole attracted a large number of submissions. Generally the submissions included the identification of the submitter's support or opposition to the Variation in its entirety. Other submissions request consequential amendments that support the decisions sought in the submitter's submissions and further and additional relief to meet the concerns of the submitter.

23.3 A number of submitters seek retention of the Variation subject to their more specific submissions including Nga Rūnanga and Te Rūnanga O Ngāi Tahu, Beef + Lamb NZ, Fonterra and Federated Farmers.

23.4 MH Klaassens seeks the retention of the whole Variation because of the potential benefit for future generations compared to the status quo. Similarly, C Ryan requests retention because of the role the Variation has in preserving Te Waihora/Lake Ellesmere.

23.5 Some submitters identify concerns with the Variation without specifying what changes the submitters would like to see. These include:

- The Lower Selwyn Huts Owners Association, which submits in support and requests amendments that recognise the cultural and social history of the Lower Selwyn Huts. The submitter requests specific consultation be carried out with Lower Selwyn Huts, to ensure the cultural and social history of the huts is appreciated.
- C Thomas requests that everybody is treated equally and the dairy industry is not favoured.
- M & A Hamblett seek greater recognition of environmental aspects, including inanga spawning, recreational use, mudfish habitat and nitrogen toxicity.
- J Norriss has concerns about the loss of water races.

23.6 Other submitters identify general concerns with the whole Variation. These include:

- Nga Rūnanga and Te Rūnanga o Ngāi Tahu seeks linkages to Section 12: Central Canterbury Alpine River section of the pLWRP.
- Te Taumutu Rūnanga seeks to ensure that Variation 1 retains the message of continuous improvement; and protects the quality of drinking water.
- Selwyn DC considers that the Variation does not give effect to the CRPS and only achieves some objectives of the pLWRP.

- A large number of submitters including R Manson, Horticulture NZ, McKavanagh Holdings Ltd, F & R Lamborn are opposed to the whole Variation.
- R Manson opposes the Variation due to insufficient time to consider the plan and make comment. This submission is repeated by R & S Bates who support the objectives of the plan but did not have enough time to understand the plan and are concerned about the economic viability for communities. ANZCO & CMP also request that the Variation be withdrawn and Canterbury Regional Council undertake further consultation.
- Malvern Hills Protection Society seek effective monitoring at the cost of the consent holder.

23.7 G Carter did not request any decisions or state any concerns.

23.8 The submitters' concerns are noted and a number of the issues raised have been discussed previously. However, to give specific relief to the submitters' concerns further information is required to make amendments to the Variation. It is suggested that the submitters attend the hearing to clarify their requested relief.

Additional Policies

23.9 A number of submissions were received requesting new policies. A number of these are discussed under other topics of the Section 42A Report. However, some do not fit easily under other topics:

23.10 Fish and Game seeks a new policy: *"Ensure that land use activities and development are managed so that the life supporting capacity and ecosystem function of water is safeguarded; and where appropriate maintain or enhance freshwater values including the trout fishery, trout spawning, recreational, and amenity values; areas of significant indigenous vegetation and significant habitats of indigenous fauna; and the natural character of waterbodies."*

23.11 Seven further submissions were received on Fish and Games new policy. Four submitters including Trustpower Ltd and Central Plains Water are in opposition. Others support, support in part and oppose in part.

23.12 Forest and Bird seek a similar additional policy: *"Manage the water abstraction and discharges of contaminants and irrigation and other activities to ensure significant indigenous vegetation and significant habitats of indigenous fauna are protected and opportunities for enhancement are taken where possible."*

23.13 This amendment received mixed further submissions. Two submitters, Ellesmere Irrigation Society Inc and Trustpower Ltd, are opposed to the additional policy and the others support in part or oppose in part.

23.14 It is considered that these suggested policies are substantially similar to pLWRP Objectives 3.2 and 3.8, and therefore do not add anything of particular relevance to this sub-regional area. Therefore they are not recommended to be added.

23.15 Two submitters specifically raise recreational values in the catchment:

23.16 Forest and Bird seeks an additional policy: *"Recognise the importance of the Selwyn-Te Waihora catchment for its recreational and amenity values and ensure the natural character of its waterbodies are protected."*

23.17 The above additional policy received six further submissions with split opinions.

23.18 D Rankin seeks to make obvious policies and rules addressing Canterbury Water Management Strategy recreational targets for the Selwyn and LII rivers in pLWRP or Variation 1.

23.19 It is acknowledged that there is limited recognition of recreational values in Variation 1. Again, the pLWRP objectives and policies are considered to be relevant in this catchment. However, it is noted that the NPSFM, recently updated, includes increased emphasis on recreational values. On this basis, it may be appropriate to include additional policies in the sub-regional section. Alternatively, the CRC may need to look at the region-wide provisions again in the light of the requirements of the recently updated NPSFM, and it may be more appropriate that recreational values are considered at that time. On this basis, no particular recommendation is made.

Appendix A - Zone Committee expectations for work by Primary Sector organisations and others on a recommended approach to managing to water quality limits in Selwyn Waihora catchment

(as agreed by Zone Committee on 9 April 2013)

The Zone Committee expects the Primary Sector organisations to work with staff of Te Rūnanga o Ngai Tahu and Environment Canterbury and, if possible, of Fish and Game and DOC.

The Zone Committee expects this working group to develop consensus recommendations on the approaches required for management of nutrients from agriculture practices in Selwyn Waihora that take into account, though not limited to, the following:

a) The requirement to meet GMP (good management practice) nitrogen loss rates as soon as possible;

b) The requirement to achieve a nitrogen load limit of 3,700tN/year[253], or lower, by 2035 (note this load limit is based on losses estimated using Overseer 5.4 and will be updated using Overseer 6). The load limit has not yet been confirmed by the Zone Committee, some committee members want the load limit to be less than 3,700tN/year and to achieve water quality outcomes sooner than what is proposed in the Solutions Package;

c) The inclusion in the load limit (as per b above) of a provision for the nitrogen load from the land use intensification resulting from CPW development of 30,000ha of dryland to irrigation;

d) The requirement for legally defensible and implementable controls/limits that apply at a property level;

e) The requirement to manage land use intensification, including any risk of a land-use change gold rush in the short-term;

f) Consideration of the deliberations from the focus group process (of the Limit Setting process) and the discussions to date, and on-going, of the zone committee.

The Zone Committee expects the working group to provide updates to the Zone Committee meetings on 7 May and 4 June. The verbal update should be accompanied by a written update in the Agenda Papers for these meetings (the deadline for these being 29 April and 27 May).

The Zone Committee requires the working group to provide its recommendations to the Zone Committee in mid June at an additional Zone Committee meeting that will be scheduled in the week of 17 June.

[253] The farming nitrogen load limit calculated using an updated Lookup Table is 4,830 tonnes per year (using Lilburne et al. 2013 – Estimating nitrate-nitrogen loss rates under rural land uses in Canterbury (updated)).

Appendix B – Technical Overview References

Bidwell, V., Lilburne, L., Thorley, M., Scott, D., 2009. Nitrate discharge to groundwater from agricultural land use: an initial assessment for the Canterbury Plains.

Burrell, G., 2011. Te Waihora/Lake Ellesmere Catchment: Ecological Values and Flow Requirements, Golders.

Clark, D.A., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Surface water quantity

Gibbs, M., Norton, N. 2013. Te Waihora/Lake Ellesmere: Water quality remediation and ecosystem restoration opportunities. CHC2012-138, NIWA report prepared for Environment Canterbury.

Golders, 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Ecology

Hanson, C., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios. Groundwater quality, Environment Canterbury.

Harris, S., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios : Economic Impact Assessment

Hill, Z., Lilburne, L., , 2014. Technical memorandum to support Water Quality and Water Quantity Limit Setting Process in Selwyn Waihora Catchment: Predicting Consequences of Future Scenarios - GIS modelling

Hill, Z., Lilburne, L., Elley, R., Ford, R., Pairman, D.,, 2012. Preparation of a GIS based land use map for the Canterbury Region. R12/119, Environment Canterbury.

Hughey, K., . Taylor, K, J, W,. (Editor), 2007. Te Waihora/Lake Ellesmere State of the Lake and Furure Management.

Kelly, D., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Surface water quality Environment Canterbury.

Lilburne, L., Webb, T., Ford, R. and Bidwell, V., 2010. Estimating nitrate-nitrogen leaching rates under rural land uses in Canterbury. R10/127, report prepared for Environment Canterbury.

Lilburne, L., Webb, T., Robson, M., Watkins, N., 2013. Estimating nitrate-nitrogen leaching rates under rural land uses in Canterbury (updated).

Norton, N., Horrell, G., Allan, M., Hamilton, D., Sutherland, D., Meredith, A., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Te Waihora/Lake Ellesmere

Robson, M.C., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Overview Report. Environment Canterbury Technical Report.

Scott, D. and Weir, J., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios. Groundwater quantity.

SWZC, S.W.Z.C., 2012. Selwyn Waihora Zone Implementation Programme.

Taylor, N., McClintock, W., Mackay, M, 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Social Impact Assessment, . .

Tipa, G., 2013. CULTURAL VALUES, FLOW & WATER MANAGEMENT ISSUES FOR THE WAIKIRIKIRI / SELWYN - TE WAIHORA CATCHMENTS, Tipa and Associates.

Tipa, G., 2014. Technical report to support water quality and water quantity limit setting process in Selwyn Waihora catchment. Predicting consequences of future scenarios: Cultural Impact Assessment.

Webb, T., Hewitt, A., Lilburne, L., McLeod, M. and Close, M., 2010. Mapping of vulnerability of nitrate and phosphorus leaching, microbial bypass flow, and soil runoff potential for two areas of Canterbury. R10/125, report prepared for Environment Canterbury by Landcare Reseach and Environmental Science and Research.

Appendix C – Qualifications and Experience of Reporting Officers and Technical Advisors

Dan Clark

My full name is Daniel Robert Clark. I am currently employed by CRC in the role of Senior Hydrological Scientist.

I hold a BSc in Environmental Science from Lincoln University and am currently working on a Post-Graduate Diploma in Water Resource Management through the Waterways Centre, also at Lincoln University. I have been a member of the New Zealand Hydrological society since 2009.

I have worked for CRC for seven years. The first two years were spent as field hydrologist, which involved gauging and operation of field sites in the northern half of the Canterbury Region. For the last five years I have been in the role of hydrological scientist, which has involved modelling and assessment of surface water systems particularly in relation to plan development, including for Variation 1.

Duncan Gray

My full name is Duncan Peter Gray. I have worked as a Senior Freshwater Ecology Scientist for CRC since April of 2013. Prior to this I worked for two years as a freshwater ecologist for a consulting firm in Christchurch after completing post-doctoral work within the University of Canterbury Freshwater Ecology Research Group.

I hold a Bachelor of Science (Honours) in Biology conferred by the University of Leeds, UK, a Masters of Science and a PhD in ecology conferred by the University of Canterbury, NZ. I have specialised in invertebrate ecology within a range of systems, primarily braided rivers and streams impacted by mine drainage.

My work for CRC includes technical input for the limit setting process in the Selwyn Te Waihora, Wairewa and Upper Waitaki catchments, working in the science policy interface and running the regional ecosystem health monitoring program. I am also involved in national programs to align macroinvertebrate monitoring protocols.

Dyanna Jolly

My name is Dyanna Jolly. I am a self-employed consultant providing services in iwi/hapū environmental management planning and policy development, cultural impact assessment, and iwi/hapū engagement.

I have a BA (Honours) in Geography from the University of Regina and a Masters in Natural Resource Management (MNRM) from the University of Manitoba (Canada). My postgraduate research focused

on the contributions of Inuit traditional knowledge to understanding climate change in the Canadian Arctic.

My work includes the development of Iwi Management Plans, and the incorporation of iwi/hapū cultural and environmental values into regional planning processes. I have worked in this area for the last 11 years.

David Kelly

My full name is David William Kelly, I have been employed as a senior surface water quality/ ecological scientist with CRC since February 2010.

I hold the qualifications of BSc (1st Class Hons.) in Zoology and a PhD (2001) in aquatic sciences, both gained at The Queen's University of Belfast. I have over 15 years' experience in freshwater ecological science.

I specialise in freshwater ecology and in understanding and interpreting the effects of environmental stressors on freshwater ecological communities. I have worked as a post-doctoral research scientist at the Great Lakes Institute for Environmental Research in Windsor, Ontario, Canada from 2003-2007, focusing on freshwater invasion ecology. I also worked from 2007 to 2010 as a research scientist at Landcare Research and the stream ecology research group at the University of Otago, Dunedin, where I focused on assessing environmental stressor effects on New Zealand stream communities. I have authored or co-authored over 30 scientific papers in peer reviewed journals and books, and written over 10 technical reports. I have also been a reviewer for over 10 international science journals.

Carl Hansen

My full name is Carl Robert Hanson. I have been employed by the Canterbury Regional Council since June 2001. I was first hired as a Groundwater Quality Scientist. Since March 2010, my title has been Team Leader Groundwater Quality.

I hold a Bachelor of Science degree in geology from Syracuse University in New York, USA, and a Master of Science degree in geology from Dartmouth College in New Hampshire, USA. I also studied geology for a year at the University of Otago, funded by a Fulbright scholarship.

I have worked as a groundwater scientist since 1990, specialising in the fate and transport of contaminants in soil and groundwater. My work with the Canterbury Regional Council includes the design and management of projects to investigate, monitor, and report on the chemical and microbiological quality of groundwater in the region.

In previous jobs, I was involved in a number of field trials and other investigations into the environmental fate and transport of pesticides and other agricultural chemicals in soils and groundwater. I was also involved with investigations of soil and groundwater contamination on numerous industrial sites in the United States and New Zealand.

Simon Harris

Simon Harris has extensive experience with analysis of public policy and impacts on the primary sector. This includes work directly on biosecurity, irrigation, water quality, and research investment. I have had extensive experience with cost benefit analysis and impact analysis at a national and regional level. With respect to water and catchment management he has participated in Economic Impact Assessments (Central Plain Water Trust), water transfer (MfE), strategic issues associated with water allocation (Ministry for the Environment and Ministry of Agriculture and Forestry), strategic studies of water development in NZ (Water in Agriculture, 2003 for MAF) and analysis of catchment management for Environment Waikato, Horizons MW and CRC, numerous analyses of flow regimes for CRC, and worked on the impacts of nutrient management regimes for Ministry for Primary Industry, CRC and Hawke's Bay Regional Council. I have produced manuals and investigations of CBA for regional councils (in respect of the Biosecurity Act) and DOC (in respect of biodiversity).

I have completed a B. Agr.Sc Hons from Lincoln University in 1990. I have operated as an economic consultancy in the primary and resources sector which has been in operation since 1995. I previously worked as a research assistant at Lincoln University, and on research funding in the agricultural sector for the Foundation for Research, Science and Technology.

Linda Lilburne

My full name is Linda Robyn Lilburne. I have worked for Landcare Research as a Scientist since March 1994. Prior to this I was a Geographical Information Systems (GIS) consultant in the UK and NZ.

I hold a Bachelor of Science degree in mathematics from Victoria University, NZ, a Master of Science degree in information science from Otago University, NZ, and a Doctorate of Philosophy also from Otago University.

I have specialised in spatial information and modelling since 1988. My work with Landcare Research involves using simulation and statistical modelling to better understand the impacts of land use and management on the environment. In the last decade, this modelling work has focussed on non-point nutrient losses from agriculture, including modelling nutrient losses, soil characterisation, land use and risk mapping, generating land use and nutrient load scenarios, and developing some alternate nutrient allocation approaches. My research interests also cover assessing sources of uncertainty and their significance in modelling projects and consequent decision-making.

Barry Loe

My full name is Barry Anthony Loe. I have worked as a resource management consultant since 1990. Prior to this I worked for 7 years as a land and water management officer for catchment boards and regional councils in NZ.

I hold an undergraduate degree in economics and political science, a New Zealand certificate in soil and water management, and a master's degree in business administration. I am a member of the Environmental Institute of New Zealand & Australia (EIANZ).

I undertake a range of resource management functions for clients; resource consent processes, contaminated land investigations, and policy development.

My work for CRC in the Selwyn Te Waihora catchment has been to prepare an inventory of the discharges from industrial and trade processes in the catchment, and to estimate the nutrient load authorised by the respective discharge permits.

Philip Maw

Philip Maw is a partner in the law firm Wynn Williams, and leads that firm's Resource Management and Local Government team. He holds a Bachelor of Laws and Bachelor of Science.

Philip has over 10 years of experience and he regularly appears before Councils, the Environment Court and the High Court for a range of clients. He has particular expertise in freshwater management, having acted as lead counsel on the development of the Canterbury Land and Water Regional Plan and the Hurunui and Waiau River Regional Plan.

Philip is a member of the Resource Management Law Association and was previously a member of the National Committee of the Resource Management Law Association.

Matthew McCallum-Clark

My full name is Matthew Eaton Arthur McCallum-Clark. I am a Resource Management Consultant and a director of the firms Incite and Farmwell.

I hold a Bachelor of Laws from Canterbury University, a Bachelor of Commerce (Economics) from Otago University and have undertaken a postgraduate diploma in Environmental Auditing through Brunel University in the UK. I am also a qualified and experienced independent hearing commissioner, with chair endorsement.

I have been a resource management consultant for about 20 years. Over this time I have worked on a range of district and regional plans, including the proposed Land and Water Regional Plan, prepared and lodged resource consents and notices of requirement, prepared and presented Section 42A Reports and acted as hearings commissioner for both resource consent and plan change hearings.

Edward John (Ned) Norton

My full name is Edward John (Ned) Norton. I have worked as an independent water resource management consultant since 2012. Prior to this I was a freshwater resources scientist at NIWA for

11 years and for regional council, university and consultancy organisations prior to that. I have 18 years of experience working on water resource projects including development of national and regional level water policy, environmental impact assessment, monitoring, and irrigation and hydropower development schemes. I manage multidisciplinary technical teams and specialise in integrating knowledge across disciplines for collaborative problem solving. I also have a particular specialty in surface water quality.

I hold a BSc in Microbiology and Ecology, and an MSc (1st Class Hons) in Biochemistry, both from the University of Canterbury. I also have a Project Management (PMP) qualification and am a member of the Freshwater Sciences Society and the Environment Institute of Australia and New Zealand.

In my work for ECan I helped inform the Selwyn Te Waihora Zone Committee and stakeholder and community groups on water quality implications in Te Waihora. I co-authored two technical reports and organised the technical team responsible for these reports, as listed below:

Norton N., Allen M., Hamilton D., Horrell G., Sutherland D. & Meredith, A. (2014). Predicting Consequences of Future Scenarios: Te Waihora / Lake Ellesmere. Prepared for CRC, NIWA Client Report CHC2012-141 (updated January 2014).

Gibbs, M.; Norton, N. (2013). Te Waihora / Lake Ellesmere: Water quality remediation and ecosystem restoration opportunities. Prepared for CRC. NIWA Client Report CHC2012-138 (updated December 2013).

David Painter

My full name is David John Painter. I am a community member of the Selwyn-Waihora Zone Committee. I am also the Principal of my own engineering consultancy, David Painter Consulting [DPC] Limited, in operation 1997 to 2001 and 2007 onwards.

I have lived in what is now the Selwyn-Waihora Zone for more than 45 years. While I have contributed to this report in my capacity as a community member of the Selwyn-Waihora Zone Committee, I set out my academic qualifications and experience as follows.

I hold a B.E (Hons) in Mechanical Engineering (1965) and a Ph.D in Civil Engineering (1969). I am a Fellow of the Institution of Professional Engineers NZ and a Member of the Royal Society of New Zealand. I am also a member of the following organisations: International Ecological Engineering Society, N.Z. Hydrological Society, Engineers for Social Responsibility, NZ Institute of Agricultural and Horticultural Science, Water NZ [N.Z. Water and Wastewater Association]. I am an accredited RMA Commissioner under the Ministry for Environment "Making Good Decisions" programme.

In addition to the two self-employed periods above, I have been employed in various capacities since 1969 as a Research Officer, Senior Research Officer and Principal Research Officer with the New Zealand Agricultural Engineering Institute (N.Z.A.E.I.), Senior Lecturer and Reader (and Head of Department) at Lincoln University, and Associate Professor of Natural Resources Engineering at the University of Canterbury. I have also held honorary positions as Honorary Research Associate at

Lincoln University and Adjunct Professor, Department of Mechanical Engineering, at the University of Canterbury.

David Perenara-O'Connell

My name is David Perenara-O'Connell. I am currently employed by CRC in the role of Programme Manager Ngāi Tahu Relationship.

I hold an Arts Degree majoring in Māori from the University of Canterbury. I completed the First Nations' Futures Institute at Stanford University, San Francisco in 2006.

My career has included work for Ngāi Tahu over a period of 20 years: 15 years for the Ngāi Tahu Māori Trust Board and its successor Te Rūnanga o Ngāi Tahu, and 5 years for Te Taumutu Rūnanga – the Rūnanga with direct kaitiaki interests in Te Waihora and its catchment area. I am of Ngāi Te Ruahikihiki, Ngāti Moki, Ngāi Tūāhuriri, Ngāi Te Rakitāmau and Ngāti Huirapa descent.

Through my employment I have attained several years' experience in environmental management, policy development and analysis guided by the mātauranga of senior Ngāi Tahu kaumātua.

Alastair Picken

My full name is Alastair Mark Picken. I am employed by CRC as a Senior Planner, working primarily in the Selwyn Te Waihora catchment.

I hold an undergraduate degree in Agricultural and Environmental Science from the University of Newcastle upon Tyne and a master's degree (with distinction) in Environmental Quality Management from De Montfort University in the UK. I am a graduate member and hold the post-graduate diploma of the Chartered Institution of Water and Environmental Management (CIWEM).

I have worked in environmental management and water planning since 1991 for the National Rivers Authority and its successor organisation the Environment Agency in the UK in a variety of roles, most recently developing River Basin Management Plans under the EU Water Framework Directive.

Since moving to New Zealand in February 2010, I have worked for the Ministry for the Environment in Wellington as a Senior Analyst on the New Start for Freshwater Programme and from October 2010 for CRC.

My work for CRC in the Selwyn Te Waihora catchment has involved working with the Zone Committee to inform the development of its ZIP Addendum, drafting plan provisions for Variation 1 and writing part of the Section 32 Evaluation Report.

Christina Robb

My full name is Christina Anne Robb. I am currently employed as the Programme Manager – Canterbury Water Management Strategy with the Canterbury Regional Council ("CRC").

I hold a Bachelor of Engineering from University of Canterbury and a Masters in Natural Resource Management from Simon Fraser University British Columbia, Canada. I have over 20 years' experience in water management covering groundwater modelling, irrigation demand assessment, water resource development, environmental flows, water allocation policy at national and regional scales, and the management of land-use and water quality. The majority of my work has been in the Canterbury region. I was first employed by CRC in 2008, and have been in my current role since November 2012.

Melissa Robson

My full name is Melissa Clare Robson. I have worked as a joint appointment for AgResearch and CRC since January 2011. Prior to this I worked as an environmental scientist in both public and private sectors in NZ and UK.

I hold a Bachelor of Science (Honours) in Tropical Environmental Science conferred by the University of Aberdeen, a Masters of Science in Integrated Water Management and Advanced Irrigation conferred by Cranfield Institute of Water Management at Silsoe, and a Doctorate in Plant and Soil Science conferred by the University of Aberdeen, the Aberdeen Centre for Organic Agriculture and the Scottish Agricultural College.

I have specialised in farm to catchment scale management of diffuse pollution since 2003.

My work for AgResearch and CRC includes leading the technical work for the limit setting process in the Selwyn Te Waihora catchment, leading the science delivery to the community participants and working in the science policy interface. My work also includes leading a collaborative project to develop nitrogen and phosphorus footprints of farms operating at good management practice across primary sector industries, soils and climates for the Canterbury region for use in both modelling and regulation.

Nick Taylor

My full name is Charles Nicholas Taylor and I am a principal and director of Taylor Baines and Associates.

I hold a Batchelor of Arts in Geography from the University of Otago (1972), a Masters of Science in Resource Management from University of Canterbury and Lincoln College (1976) and a Doctor of Philosophy in Sociology from the University of Canterbury (1981).

I am a consultant and researcher in the field of applied social research and social assessment, working on a wide range of projects for both the public and private sectors. I was a senior research officer at the Centre for Resource Management at Lincoln College before starting my own consulting firm in 1989. My research and consulting work has involved a wide range of projects and includes

developing concepts and methods in the field of social assessment, publishing the third edition of the text Social Assessment: Theory, Process and Techniques. I am a member and Past President of the International Association for Impact Assessment.

I led the work on social aspects of the feasibility studies and social assessment of the Central Plains Irrigation Scheme in Canterbury. My work for CRC has included strategic social assessments of several catchment limit-setting processes and I led the social assessment for the Selwyn-Waihora catchment.

Julian Weir

My full name is Julian James Weir. Since 2004, I have been employed by Aqualinc Research Limited (Aqualinc), where I currently hold the position of Senior Engineer. Prior to Aqualinc, I was employed by Lincoln Environmental, a division of Lincoln Ventures Limited.

I am a Hydrogeologist and hold the qualifications of BE (Hons) and ME from the Department of Civil Engineering, University of Canterbury. I am a Chartered Professional Engineer, a member of the Institution of Professional Engineers New Zealand, and a member of the New Zealand Hydrological Society. I am also registered on the New Zealand section of the International Professional Engineers Register.

I have 14 years' experience in groundwater related research and consultancy and a further four years' experience in general civil engineering and water related work. I have extensive experience in all areas of groundwater modelling and the preparation of technical evidence for major consent hearings in both the Canterbury region and in the Tasman district.

My work for CRC has been solely focussed on running the Canterbury Groundwater Model under various development scenarios (as supplied by CRC staff) and reporting on the results.

Howard Williams

My full name is Howard Raymond Williams. I have worked as a consultant hydrogeologist for CRC since July 2010 and as an employee of CRC since 2005. Prior to this I worked as a geologist and hydrogeologist in academic, public and private sectors in NZ, Canada and the UK.

I hold a Bachelor of Science (Honours) in Geology conferred by the University of Exeter (UK) in 1970, a Doctorate in Geology conferred by the University of Exeter (UK) in 1973, and a Masters of Applied Science in Civil Engineering conferred by Dalhousie University (Canada) in 1994. Until 2014 I was a member of the New Zealand Hydrological Society. I am a currently a Fellow of the Geological Society of London, a Chartered Geologist (UK), and a Professional Geologist (Ontario).

I have specialised in catchment management and water resource issues since 1994 and completed many published reports for CRC and other organisations such as Environment Canada, Marlborough District Council, Christchurch City Council and Greater Wellington.

My hydrogeological work for CRC since 2005 includes technical assessments, reports and commentary for the limit-setting process integral to the Plan Variation in the Selwyn Te Waihora catchment, delivering science to the community participants and working with the Zone Implementation Committee. My work has also included being part of a team that recently reviewed the interaction between the Waimakariri River and the surrounding groundwater system. I have promoted the concepts of adaptive management of groundwater resources and managed aquifer recharge in a Canterbury context.

Appendix D – Specific responses to issues and questions raised in submissions

Technical memorandum

Date:	June 16, 2014
From:	Dr H R Williams
Subject:	Response to technical questions

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
1. What are the reasons for incorporating Kaitorete Spit into the Selwyn Waimakariri Combined Surface and Groundwater Allocation Zone? (Anthony Davoren) (Submission on V1 pLWRP by Davoren, A.)	Section 11.4, page 4.8, Policy 11.4.21	• There is generally acknowledged geological continuity between the strata beneath Kaitorete Spit and the landward strata underlying the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone (e.g. Brown & Weeber 1992). • Groundwater flow directions derived from Canterbury Regional Council groundwater pressure data indicate that deep groundwater underlying Kaitorete Spit is more likely fed from the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone than the neighbouring Rakaia-Selwyn Combined Surface and Groundwater Allocation Zone. The submitter's claim that the Spit is hydrogeologically distinct may be based on the fact that thin dune sands lie on top of a deep, confined aquifer system. However, that deep aquifer is continuous with the landward strata forming the Canterbury Plains. • Water quality and piezometric contours support an understanding that abstractions from beneath Kaitorete Spit are most likely sourced from groundwater flowing within the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone. Furthermore, numerical modelling has indicated that deep groundwater abstractions from the Kaitorete Spit will likely contribute to potential adverse effects in the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone rather than from the neighbouring Rakaia-Selwyn Combined Surface and Groundwater Allocation Zone.
	Section 11.5; page 4.19,	• The submitter claims in his point that, without providing supporting evidence: "... *for the Kaitorete Spit area given the*

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
	regarding Rule 11.5.36	*proven existence of groundwater that is almost certainly not derived from the Canterbury Plains.* " In response, if the Kaitorete Spit enjoys recharge from sources other than the Canterbury Plains, that recharge can only come from the volcanic rocks of the Banks Peninsula. Whilst this is acknowledged as possible, without supporting evidence it cannot be considered a significant source of recharge. Groundwater quality monitoring has indicated that the main body of deep groundwater beneath the Spit has a chemical composition similar to Canterbury Plains groundwater. While fracture flow of groundwater within volcanic rocks on the Banks Peninsula can potentially provide limited and localised recharge to the eastern end of Kaitorete Spit, this flow has not been quantified and therefore, no allocation zone has been created to represent this recharge effect.
2. Is there a case for creating a separate Groundwater Allocation Zone for Kaitorete Spit or for takes in this area to be considered on their merits when the Selwyn-Waimakariri Water Allocation Zone is exceeded? (Anthony Davoren) (Submission on V1 pLWRP by Davoren, A.)	Section 11.4, page 4.8, Policy 11.4.21	No • If the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone allocation has been exceeded, then hiving off the Kaitorete Spit and allowing further allocation from there will only reduce groundwater pressures up-gradient in the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone. Such reduction in groundwater pressures has demonstrated effects on the flows in the spring-fed streams (Williams & Aitchison-Earl 2006).

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
3. Should separate Groundwater Allocation Zones be created for all Banks Peninsula basaltic valleys in addition to the Kaituna Groundwater Allocation Zone (which itself incorporates 4 valleys)? (A. Davoren) (Submission on V1 pLWRP by Davoren, A.)	• Section 11.5, page 4.16; Rule 11.5.32 (Davoren)	No • The proposed Plan describes four valley catchments that flow into Te Waihora, and are included in the proposed Plan as a separate entity from the major allocation zones because the hydrological character of these four valleys and their aquifer components contrasts with the character of the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone. • Prices Valley is already a part of the Kaituna zone. Adding the Gebbies valley 'basaltic' catchment to this proposed Kaituna zone is not appropriate because in Gebbies Valley, groundwater discharge from the volcanic rocks mixes with groundwater discharge to the gravel-dominated aquifer system of the Selwyn-Waimakariri zone, and to Te Waihora.
4. Is there a case for changing the proposed Kaituna Groundwater Allocation Zone to include McQueens and Gebbies Valleys with the new boundary being the old course of the Halswell River	• Section 11.5, page 4.16; Rule 11.5.32 (Davoren) • Page 130 of s. 32 report (Miller)	No • The reasons for the inclusion of McQueens and Gebbies valleys within the Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone were given in the proposed Plan and in a number of technical documents produced in support of the plan variation such as "*Integrated surface water - groundwater management preferred approach*" and other documents referred to therein: http://files.ecan.govt.nz/public/lwrp/variation1/integrated-surface-water-groundwater-management-preferred-approach.pdf. • Gebbies Valley and its immediate neighbour to the south, McQueens Valley are directly connected to the parent Selwyn-Waimakariri Zone by means of silt, sand and gravel units up to 3 km wide that are continuous south of the Motukarara bedrock high. In contrast, to the south of McQueens Valley, two bedrock highs, one at Lakelands, the

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
(Grant Miller) with additional submission from A Davoren? (Submission on V1 pLWRP by Davoren, A and Submission on s.32 report, accompanying V1 pLWRP, by Miller, G.)		other at Ataahua, effectively separate the aquifer system to the north from the valley system in Kaituna Valley. • Shallow bores in the McQueens, and Gebbies valleys, even those immediately SE of Motukarara, are generally, though not always low yielding and many are of small diameter. Some are screened in low-yielding volcanic rocks that underlie the marine clays and silts that typify this area bordering the Banks Peninsula. • Significant to the answer to the submitter's question is that there is a hydrogeological transition between the surficial fine-grained aquifer system in these two valleys and the gravel-dominated strata making up the remainder of the Selwyn-Waimakariri Allocation Zone. • It is acknowledged that there are also bores within the volcanic rocks that underlie these two valleys that provide limited groundwater recharge to the overlying surficial strata (where present). • The recharge from these volcanic rocks into the overlying surficial strata is generally small. It is significant that these surficial strata are continuous with the gravel-dominated strata of the Selwyn-Waimakariri Allocation Zone to the northwest, that in turn discharge groundwater to Te Waihora.
5. Is formalising the West Melton Special Zone regime, including trigger levels for takes above 10 m^3/day, still justified on technical grounds? (Ian McIndoe) (Submission on V1 pLWRP	P3-1, Section 9.4.8	Yes • The reason for this response is that there will likely be a long time delay between the operative date of this proposed Variation and the full introduction of the necessary water inputs into and restriction of takes (if any) from the catchment. It is anticipated that this time delay may allow a temporary worsening of adverse environmental effects before there is a long-term improvement towards the expected environmental outcomes.

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
by McIndoe, I.)		
6. If retaining the West Melton Special Zone is justified should the southern boundary be aligned with the Groundwater Allocation Zone boundary? (Ian McIndoe) (Submission on V1 pLWRP by McIndoe, I.)	P3-1, Section 9.1A	No • While it is acknowledged that having an additional local water management zone overlain on two major catchments is administratively 'untidy', this special management zone was set up in response to user concern 20 years ago to counteract local effects, which straddle the two zones. A 2011 report: *Technical review of the effectiveness of the existing groundwater management regime operating in the West Melton Special Zone*; prepared by Pattle Delamore Partners Limited (CJ100R001_Final2) for Canterbury Regional Council, 31 p., indicated that while acknowledging that the management mechanism is imperfect, the method was considered a '*beneficial management strategy*'. • It is anticipated that the provision of a new allocation regime in both the Christchurch-West Melton catchment and the neighbouring Selwyn-Waimakariri Combined Surface and Groundwater Allocation Zone will ultimately mean that the current constraints on groundwater takes will, over time, become redundant.
7. If retaining the West Melton Special Zone is not justified, do any of the groundwater allocations need to be adjusted? (Ian McIndoe) (Submission on V1 pLWRP by McIndoe, I.)	P3-1, Section 9.1A	No • The West Melton Special Zone is still justified as a management tool to reduce localised adverse effects. • Once the proposed Variation becomes operative and adverse effects generally are in decline as a result of improved water balance, then the special status of management in this area can be reviewed.

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
8. Opposes combined management of groundwater and surface water. Does groundwater adhere to the altered allocation zones? (submitter contests that it does not) (John Talbot) (Submission on V1 pLWRP by Talbot Bowden Environmental)	Section 11.4 Policies Page 36	• The submitter opens his submission with his point, that the water resource, historically regarded as two entities, should continue to be so treated. • Management of groundwater and surface water as distinct entities as proposed in the original NRRP has demonstrably failed to protect the flows in the lowland streams, largely because it did not take into the account the ways in which the two faces of the water resource interacted. Furthermore, the method of setting the allocation limit in the draft NRRP was found to be insufficiently conservative, with the result that during seasons of high demand following winters with low recharge (e.g. 2005-6), the pressure state of the groundwater resource was very low, with the result that spring-fed streams either dried up, or experienced very low flows for a protracted period. The proposed plan maintains that the surface and groundwater resources should be managed collectively, a process acknowledged by water resources management plans internationally.
	Section 11.4 Policies Page 36	• The groundwater flow directions are not perfectly known and are based on a combination of modelling of actual groundwater level monitoring data (contouring), or on three-dimensional numerical groundwater modelling. • Whilst it is acknowledged that neither of these modelling processes produces precise contour lines and inferred groundwater flow directions, the proposed groundwater allocation boundaries more nearly reflect flow directions or boundaries than those originally proposed for the NRRP. • While deep groundwater may, in detail, cross some parts of the allocation boundaries this does not invalidate their overall purpose which is to outline general areas of similar hydrological characteristics, and, to delineate zones where the causal effects of groundwater and surface water abstractions can be efficiently managed.
	Section 11.4, Page 36, Policy 11.4.22	• The distinction between 'up-plains' and 'down-plains' has been proposed in part to facilitate the more general use of surface water, such as that in the proposed CPW scheme, in the upper-plains area, while maintaining groundwater as the dominant source in the down-plains area. The proposal to prohibit transfer of groundwater take and use consents up-

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
		plains from down-plains locations is consistent with this broad-scale water management. • It is well understood that the accumulated effects of 'up-plains' groundwater abstractions produces long-term effects that are less seasonally variable and thus not amenable to policies that control more immediate 'near field' stream depletion effects in the 'down-plains' area. Limiting transfer of consent from 'up-plains' to down-plains' by means of partial surrender is part of a management regime to reduce seasonal stream depletion effects.

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
9. What is the technical justification for the Little Rakaia Combined Surface and Groundwater Allocation Zone and are the boundaries correct? (Submitter seeks deletion of the LRZ as they consider it establishes allocation rules regarding water takes from the Rakaia River) (Trustpower) (Submission on V1 pLWRP by Trustpower Limited)	Section 11 - Selwyn-Waihora introduction Section 11.1A	• Yes, the on-land boundaries are as correct as they can be given the geological, hydrological and geomorphological data used to compile them. • These boundaries are described and technically justified in technical documents, such as CRC Technical Report R09/43. • It has been acknowledged by consent holders, CRC technical staff, consent commissioners and hydrogeological consultants for over 15 years that the groundwater conditions in the proposed Little Rakaia Combined Surface and Groundwater Allocation Zone are radically different to those in the neighbouring Rakaia-Selwyn Combined Surface and Groundwater Allocation Zone. • The southern boundary of the Little Rakaia Combined Surface and Groundwater Allocation Zone is a boundary characterised by planning, not technical arguments. Moving the existing boundary, located along the southern boundary of Rakaia River, to the left (northern) bank of the main stem of the Rakaia River has the potential to isolate a significant number of groundwater abstraction consents on Rakaia Island that would then need to be incorporated within the Rakaia River allocation mechanism described in the Conservation Order.

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
10. Will groundwater table fluctuations affect the needs of Riccarton Bush? (Submission on V1 pLWRP by Riccarton Bush Trust)	Overall content and environmental effects of proposed Variation	Not adversely; the proposed management regime should be beneficial to Riccarton Bush. • The water management in proposed Variation attempts to remove or reduce the extreme groundwater fluctuations that have occurred in the past. • Providing the management regime for the Te Waihora catchment is accepted as in the proposed Variation, and that a companion water management regime for the Christchurch catchment is made operative, it is expected that groundwater fluctuations at Riccarton Bush and elsewhere in the Christchurch area would decrease. • A 2013 report developed by Golder Associates (NZ) Limited for the Christchurch City Council entitled: "*State of the Science, gaps & future work - Recharge of the Christchurch Artesian Aquifer*", based on caucusing within an expert panel of eight scientists, indicates that the boundary between the Christchurch-West Melton and Selwyn-Waihora groundwater zones, is in large part a groundwater flow line. One result of this conclusion is that it is recognised that hydrogeological effects caused by changes in recharge and discharge on one side of the line are unlikely to have a significant impact on groundwater-dependent systems on the other.

Responses to questions by Mr D Scott and Mr J Weir – 16 June 2014

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
Y Thomas (ID 52109) comments that Hororata village has a flooding problem and that large scale irrigation schemes would adversely impact the flooding. The submission records opposition to policies 11.4.20, 11.4.21 and	Section 11.4, page 4.7, Policy 11.4.20	• Policy 11.4.20 is an enabling policy relating to managed aquifer recharge (MAR) and targeted stream augmentation (TSA) to assist with improvements to lowland stream flows. This policy would not reduce the requirement to consider the environmental impacts (such as Hororata's flood risk) of any specific MAR or TSA proposal. • The groundwater modelling of the Zone Committee's Solution Package indicated the potential for significant localised groundwater mounding to

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
11.4.32 and seeks assurance that: - If canals proceed they need to be made of impervious material, and - Hororata's flooding problems are not increased.		develop as a result of MAR sites. The modelling report acknowledged that it was based on a simplified representation of how MAR might be implemented. More detailed and site-specific evaluation would be required to identify an appropriate design. One of the pre-requisites for any such option would be that it did not exacerbate any existing drainage or flooding problems. • The construction of canals has already been consented as part of the Central Plains Water project.
	Section 11.4; page 4.8, Policy 11.4.21	• Policy 11.4.21 concerns the management of groundwater and surface water as a single resource. The submitter's concerns do not appear to justify opposition to this particular policy. Indeed, while the policy is primarily concerned with lowland streams, an integrated approach to water resources should also insure comprehensive evaluation of the potential impacts of changes to groundwater management on surface water.
	Section 11.4; page 4.9, Policy 11.4.32	• Policy 11.4.32 is also an enabling policy and, as for Policy 11.4.20, an evaluation of environmental effects would be required to gain consents for a specific proposal. Ordinarily it wouldn't be necessary to spell that out in this policy. However, since the policy does list a number of specific provisions but is silent on the risk of flooding, it would be appropriate to add an explicit provision, such as: *-adverse effects on surface water drainage are avoided or mitigated*.
Many submitters recorded their opposition to policy 11.4.23 and the associated Schedule 10. Submission analysis identified the following	Section 11.4; page 4-8, Policy 11.4.23 Schedule 10;	<u>Key submitters:</u> • Ellesmere Irrigation Society Inc • Central Plains Water • Irrigation NZ • Dunsandel Groundwater Users Group

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
questions:	page 4-38	• Synlait Farms • Dairy Holdings Ltd • Fonterra • Bowden Environmental • Federated Farmers • F & R Lamborn • McKavanagh Holdings Ltd
1. Will allocating water based on demonstrated use reduce over-allocation?		• The principal justification for relating water allocation to use is to manage the risk of transfers of surpluses leading to increased abstraction. In some jurisdictions a helpful distinction is made between "wet water" (allocated water that is actually used) and "dry water" (allocated water that is not used). It is only when "dry water" is converted to "wet water" (e.g. by increasing the area irrigated) that the abstractive stress is increased. • If an individual's water allocation exceeds actual requirements then redefining the allocation will reduce the overall total zone allocation even though it will make no difference to the abstractive stress on the resource.
2. Is allocating water based on demonstrated use justified technically?		• Allocating water simply on the basis of demonstrated use is not sound and, as some submitters have noted, may lead to a "use it or lose it" approach. It would be preferable to abandon the "demonstrated use" terminology and instead adapt the approach already incorporated in the Land and Water Plan which refers to "reasonable use" in terms of water use efficiency and records of actual use. • It is important to note that the volume of water allocated for irrigation has generally been based on a formulaic basis that is intended to satisfy requirements. The expectation here is that records of actual use should allow these requirements to be more accurately determined.
3. What is the evidence that water users have been allocated more		• Water use surveys and routine monitoring have demonstrated that the annual volume of water abstracted is, more often than not, less than that

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
water than they need and how good is it?		allocated. This presumably reflects the conservative nature of the standard formulaic approach to determining annual volumes. • It should be noted that the proposed policy is intended to deal with those cases where water users have demonstrably been allocated more water than they need.
4. How should records of past use be 'moderated'?		• As commented in response to question 2, this question has yet to be answered.
5. Won't allocation based on demonstrated use lead to inefficient water use ('use it or lose it' response)?		• Refer to question two
6. How many years metering data is needed to base allocation on demonstrated use?		• The length of record required to determine reasonable use has not been specified. If an expert efficiency audit approach was adopted then that would presumably be a matter for expert opinion.
7. What is the definition of 'demonstrated use"?		• "Demonstrated use" has not been defined and, as noted above, would be better replaced with reference to "reasonable use". In either case the lack of definition problem remains (NB see response to question 2).
8. Are the arguments <u>against</u> demonstrated use justified (e.g. climate variability, rotational arable systems)?		• The factors referred to are not justified arguments against a reasonable use test. Instead they identify some of the many factors that would need to be taken into account if an expert water use efficiency audit approach was adopted.

Response to questions by Mr D Clark – 16 June 2014

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
1. What is the reason for reducing reliability from 9 to 8.5 out of 10 years in Schedule 10 Method 1? [paraphrased] *(Submission on Variation 1 by Ellesmere Irrigation Society and Irrigation NZ)*	Policy 11.4.26 Rules 11.5.32 11.5.33 Schedule 10	The reason for reducing reliability from 9 out of 10 to 8.5 years out of 10 is that the current allocation is higher than the proposed limits. To meet the allocation limits there must be a reduction in the consented allocation. This can either be done completely by removing some peoples allocation or by 'sharing the pain' by having a reduction in reliability for all consent holders. In a workshop with the Zone Committee, it recommended that consent holders receive a reduction in reliability to meet the allocations required to meet in-stream values.
2. Reliability of supply less than 9 out of 10 years will result in inefficient water use [paraphrased] *(Submission on Variation 1 by Irrigation NZ, Synlait, Central Plains Water and many other submitters)*	Policy 11.4.26 Rules 11.5.32 11.5.33 Schedule 10	Reducing the reliability to 8.5 out of 10 years affects the annual volume available for consent holders, not when water is available to them. This does not mean that people will have to use water when it is available "just in case", rather they should be able to manage their volume over the course of the season.
3. The difference in volume abstracted between 8.5 and 9 years reliability is insignificant when put in the context of resulting environmental gains and the uncertainty that surrounds the modelling. [paraphrased] *(Submission on Variation 1 by*	Policy 11.4.26 Rules 11.5.32 11.5.33 Schedule 10	The reduction from 9 to 8.5 years means that in extreme years the annual allocation may not meet the demands for irrigation. These are also the years when flows in streams are likely to be at their lowest and most likely not to meet the desired values. So this reduction in reliability will be of benefit at times the environment is most stressed.

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
Irrigation NZ)		

Response to questions by Mr M Smith – 27 June 2014

Question or comment by Submitter	Section of V.1: pLWRP or s.32 report	Responses to submitter comments
1. Why does CRC not do actual aquifer testing to determine stream depletion (as aquifer tests in the Ellesmere area show the results of desk to assessment are inaccurate? [paraphrased] *(Submission on Variation 1 by Ellesmere Irrigation Society)*	Rule 11.5.32	CRC's preferred approach to stream depletion is that testing, using observation wells, is undertaken to determine hydraulic connection. Where aquifer testing has not been undertaken CRC has adopted a conservative approach to stream depletion to ensure that any possible hydraulic connection is accounted for. The limited testing to date indicates that in most cases the desktop estimates are appropriately conservative. Robust assessments of stream depletion, including aquifer testing, should have been carried out at the time of application for any water permit, however, in many cases a conservative desktop estimate has been accepted in lieu of physical testing. Any new application for a water permit needs to address potential connection with surface water. Aquifer testing of wells is required for all applications for new consents, unless reliable testing has already been carried out. Historically this has not been a requirement and consequently many areas have little or no aquifer information with which to carry out accurate depletion assessments.

Technical memorandum

Date:	June 24, 2014
From:	Dyanna Jolly (Wītaskēwin)
Subject:	Response to technical questions on the Cultural Landscape Values Management Area arising from Summary of Submissions

Question 1. What is the justification for the Cultural Landscape Values Management Area, including the Lake Area and River Zones?

Te Waihora is a tribal taonga of outstanding significance. The significance of the lake in respect of Ngāi Tahu history, mahinga kai and customary fisheries as an outstanding value which warrants protection is confirmed by the National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990 (as amended in 2011) and the Ngāi Tahu Claims Settlement Act 1998.

The Cultural Landscape Values Management Area (CLVMA) is a focused effort to recognise and provide for the outstanding mahinga kai, wāhi tapu and wāhi taonga values of the lake in an integrated manner. The addition of new rules, and amendments to existing regional rules, give priority to the outstanding values of the lake and recognise the sensitivity of Te Waihora as a receiving environment, by enabling the careful management of activities that have a direct influence on lake health and the relationship of Ngāi Tahu with the lake. This enables Ngāi Tahu to more effectively exercise kaitiakitanga with regard to Te Waihora.

The CLVMA is part of the overall management framework for the catchment designed to achieve improved water quality and healthy lake outcomes.

The CLVMA reflects:

- The outstanding significance of the Te Waihora as a tribal taonga and mahinga kai, and the importance of the lake with regard to mana, rangatiratanga and kaitiakitanga, and Ngāi Tahu identity and cultural well-being. The CLVMA reflects the "cultural weight" given to a particular area through the strength of the connection of tangata whenua to a place.[254]
- The concentration of mahinga kai, wāhi tapu and wāhi taonga sites, values and resources that contribute to the outstanding significance of the lake, and spatial associations (i.e. networks and interdependence) of these.
- The relationship between the lake as an Ngāi Tahu cultural landscape and a healthy lake. Ngāi Tahu values such as mahinga kai rely on a healthy lake.
- The need to manage the lake as one integrated freshwater mahinga kai system and cultural site, rather than individual sites.
- The sensitivity of the lake and its surrounds and associated values to activities that may result in the discharge of contaminants to the lake. This sensitivity is both environmental and spiritual/cultural. For example, it is inconsistent with Ngāi Tahu tikanga for human effluent not to enter the lake because the lake is used for food gathering.
- The importance of the lowland tributaries with regard to protecting the outstanding values of

[254] Sims, M & Thompson-Fawcett, M. 2002. Planning for the Cultural Landscape (In: Kawharu, ed., Whenua: Managing our resources.)

the lake, the concentration of mahinga kai, wāhi tapu and wāhi taonga values and sites associated with these waterways.

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The CLVMA gives effect to Te Waihora policies in the *Mahaanui IMP 2013*, and is consistent with the purpose and intent of the *Te Waihora Joint Management Plan 2005*. It is one more tool in the toolbox towards achieving a healthy lake.

Regional plans are required to be consistent with water conservation orders (s67 RMA). The CLVMA recognises the significance of Te Waihora to Ngāi Tahu as an outstanding value to be protected, as confirmed in the National Water Conservation (Te Waihora/Lake Ellesmere) Order 1990. The amended and new rules are intended to ensure that resource consents granted in this area not contrary to the outstanding values identified in the water conservation order (s217 RMA).

Boundaries:

Consistent with the principle of ki uta ki tai, land use and freshwater management in the whole of the catchment has an effect on lake health. However, the relationship between the area defined as the CLMVA and lake health is more immediate and direct.

The Lake Area captures the lake and its margins and associated wetlands, reflecting the historical extent of the lake and the area affected by a high water table. The management area therefore protects springs and the high water table, and enables consideration of activities that may have effects on the lake in times of winter high water table or flooding (i.e. low lying land). The use of roads to delineate these boundaries is for practical reasons.

The River Zone captures the tributaries in the lower catchment/spring area. Mahinga kai is the primary driver for the outstanding significance of the lake, and the lake's tributaries support the outstanding values of the lake. These tributaries are identified by Ngāi Tahu as wāhi taonga (treasured places). Protecting the outstanding values of the lake requires managing activities that affect the quality and quantity of flow from tributaries, or the health of tributaries for mahinga kai habitat. Further, there are numerous sites of significance (mahinga kai, wāhi tapu, wāhi taonga) located along Te Waihora tributaries.

The use of a Lake Area and River Zone (polygons) is a move away from a site-based approach that manages 'dots on maps' to a more holistic approach that recognises the concentration of sites and values in an area, and the spatial associations between these. For example, mahinga kai values are a driver for the outstanding significance of the lake, and these values are not confined to specific sites, so nominating specific sites is not effective. Zones enable integrated management of land, water and resources. The emphasis is on the 'whole' having greater value and significance than the individual parts: managing the lake as an integrated freshwater mahinga kai system and cultural site.

Question 2. What would be the consequences if the Lake Area was reduced to 10 m?

The area defined as the Lake Area reflects the concentration and distribution of sites and values associated with the lake, and the area identified as sensitive to certain land use activities because of

the potential direct effects on lake health and associated values. The Lake Area includes the lake and its margins and associated wetlands and reflects the historical extent of the lake and the area affected by the high water table. The management area therefore protects springs and the high water table, and enables consideration of activities that may have effects on the lake in times of winter high water table or flooding on low lying land.

A 10 m wide Lake Area would significantly reduce the ability of the CLVMA to protect the outstanding values of the lake. This is because:

- 10 m does not effectively cover areas identified by Ngāi Tahu as significant due to concentrations of wāhi tapu, wāhi taonga and mahinga kai values that contribute to the significance of the lake as a tribal taonga.
- Restricting the Lake Area to the immediate lake margins limits the integrated management of land and water for the purposes of managing the outstanding values of the lake, as it does not recognise the impact of activities in the wider lake surrounds on lake health.
- The geographical extent of the Lake Area reflects an area defined as sensitive to certain activities, particularly those that involve the discharge of contaminants to water or to land where contaminants may enter water. A 10 m wide Lake Area significantly limits the potential to manage those activities that are having an impact on the lake.
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In my opinion a 10 m wide Lake Area is inconsistent with the policy message in Variation 1 that Te Waihora is of outstanding significance, as it does not enable appropriate recognition or weight to the values recognised by the Water Conservation Order, as required by sections 67 and 217 of the RMA.

Question 3. What would be the consequences if the River Zone was reduced from 20 m to 10m?

The River Zone of the CMLVA recognises the relationship between the outstanding significance of the lake and the lowland tributaries that flow into the lake. Given the importance of the tributaries to maintaining the outstanding values of the lake (i.e. mahinga kai), the River Zone addresses the need to manage the effects of certain activities alongside lowland tributaries.

The River Zone includes lowland waterways and 20 m either side. The 20 m distance reflects:

- A space adjacent to waterways that requires additional or careful management, reflecting the potential for certain activities along waterways to have adverse effects on water quality and other values.
- The location, distribution and concentration of wāhi tapu, wāhi taonga and mahinga kai sites and values that contribute to the significance of the lake as a tribal taonga.
- Consistency with other planning provisions. The Waikiriri/Selwyn River is recognised as a Wāhi Taonga Management Area in the Selwyn District Plan, which includes 20 m on either side of the waterway. 20 m is the default position for setbacks and buffer zones in the Mahaanui IMP 2013 to protect water quality and Ngāi Tahu values associated with waterways (Policies WM12.14 and WM12.15). The proposed Land and Water Regional Plan also identifies 20 m as a setback from surface waterways.

In my opinion, 20 m is practical and realistic, and aligns with other planning provisions designed to protect surface waterways. It is important to have consistency across the River Zone, and between

planning documents. Ultimately the boundaries of the River Zone signal the need to carefully manage activities that occur in close proximity to waterways, a message consistent with the proposed Land and Water Regional Plan. The River Zone adds another layer of protection, recognising the significance of the tributaries to Ngāi Tahu and their role in protecting the values that contribute to the outstanding significance of the lake.

Appendix E – Zone Implementation Plan

http://ecan.govt.nz/publications/General/cw-selwyn-waihora-zip.pdf

Appendix F – Zone Implementation Programme Addendum

http://ecan.govt.nz/publications/General/zip-addendum-at-150613-v6.pdf