Written Submission on Freshwater Planning Instrument Parts of Proposed Otago Regional Policy Statement 2021

Submissions must be received by Otago Regional Council by 3 pm Tuesday 29 November 2022

To: Otago Regional Council

1. **Name of submitter** *(full name of person/persons or organisation making the submission. Note: The submissions will be referred to by the name of the submitter)*

   Horticulture New Zealand

2. This is a submission on the **Freshwater Planning Instrument Parts of Proposed Otago Regional Policy Statement 2021**.
3. **could not** *(Select one)* gain an advantage in trade competition through this submission. (*See notes to person making submission)*
4. I **am not** *(Select one)* directly affected by an effect of the subject matter of the submission that
   a. adversely affects the environment; and
   b. does not relate to trade competition or the effects of trade competition (See notes to person making submission)
5. I **wish** *(Select one)* to be heard in support of my submission
6. If others make a similar submission**, I will** *(Select one)* consider presenting a joint case with them at a hearing
7. **Submitter Details**
   a. **Signature of submitter** *(or person authorised to sign on behalf of submitter)*

      Leanne Roberts

   b. **Signatory name, position, and organisation** *(if signatory is acting on behalf of a submitter organisation or group referred to at Point 1 above)*

      Name: Leanne Roberts

      Position: Senior Environmental Policy Advisor

      Organisation: Horticulture NZ

   c. **Date**

      29/11/2022

Address for service of submitter (*This is where all correspondence will be directed*)

d. Contact person (*name and designation, if applicable*)

Leanne Roberts, Senior Environmental Policy Advisor

e. Email:

Leanne.roberts@hortnz.co.nz

f. Telephone:

0275461655

g. Postal address *(or alternative method of service under section 352 of the Act):*

Horticulture NZ, Lvl 4 Kiwi Wealth House, 20 Ballance Street, Wellington 6140

8. My submission is:

Included as an attachment, complete with submission table.

SUBMISSION ON

Proposed Otago Regional Policy Statement - Freshwater

29 November 2022

To: Otago Regional Council
Name of Submitter: Horticulture New Zealand

Contact for Service:

Leanne Roberts
Senior Environmental Policy Advisor
Horticulture New Zealand
PO Box 10-232 WELLINGTON
Ph: 027 546 1655
Email: leanne.roberts@hortnz.co.nz

Horticulture™ New Zealand
Ahumāra Kai Aotearoa

OVERVIEW

Submission structure

1 **Part 1:** HortNZ's Role
An overview of Horticulture New Zealand (HortNZ).

2 Part 2: Horticulture Sector
An overview of the horticulture in Otago

3 **Part 3: Submission**
An overview of the key issues and changes we seek within the RPS

Submissions table
Submissions sought in relation to specific provisions of the proposed Otago RPS Freshwater

Our submission

Horticulture New Zealand (HortNZ) thanks Otago Regional Council for the opportunity to submit on the Freshwater Regional Policy Statement Plan Change and welcomes any opportunity to continue to work with Otago Regional Council and to discuss our submission.

HortNZ could not gain an advantage in trade competition through this submission.

HortNZ wishes to be heard in support of our submission and would be prepared to consider presenting our submission in a joint case with others making a similar submission at any hearing.

The details of HortNZ's submission and decisions we are seeking are set out in our submission below.

PART 1

HortNZ's Role

Background to HortNZ

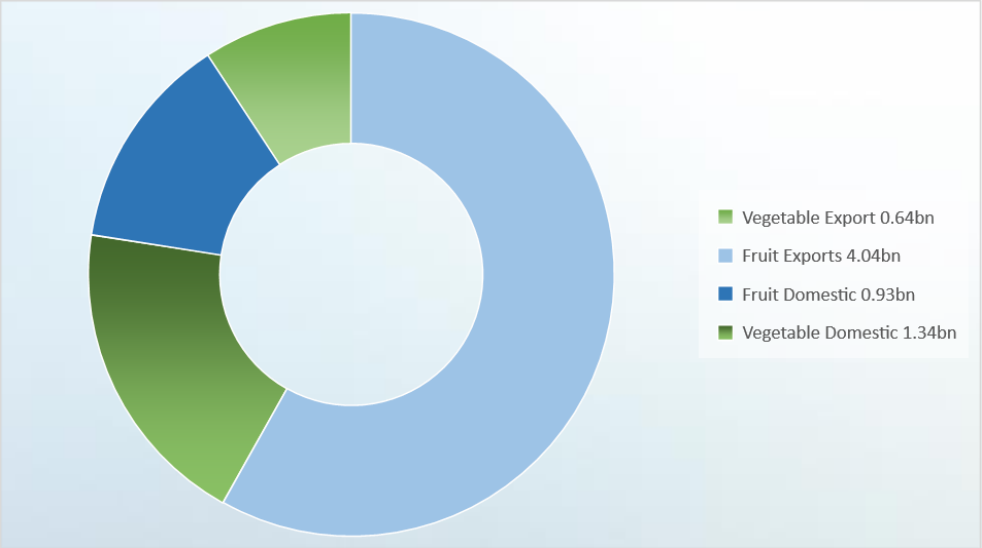
HortNZ represents the interests of 5,500 commercial fruit and vegetable growers in New Zealand who grow around 100 different fruit, and vegetables. The horticultural sector provides over 40,000 jobs, and has a value of 6.95 bn.

There is approximately, 80,000 hectares of land in New Zealand producing fruit and vegetables for domestic consumers and supplying our global trading partners with high quality food.

It is not just the direct economic benefits associated with horticultural production that are important. Horticulture production provides a platform for long term prosperity for communities, supports the growth of knowledge-intensive agri-tech and suppliers along the supply chain; and plays a key role in helping to achieve New Zealand's climate change objectives.

The horticulture sector plays an important role in food security for New Zealanders. Over 80% of vegetables grown are for the domestic market and many varieties of fruits are grown for consumption by kiwis.

HortNZ's purpose is to create an enduring environment where growers prosper. This is done through enabling, promoting and advocating for growers in New Zealand.



PART 2

Horticulture Sector

1. Horticulture in the Otago Region

There is an estimated 3442 hectares[1] of horticultural land in Otago. There has been an overall reduction in the horticultural land use area in Otago between 2002 – 2019.[2]

There are approximately 191 commercial growing operations in the Otago Region. These include a wide variety of both fruit and vegetable crops.

1.1. Growing Districts

Currently the highest concentrations of growers are in the Central Otago and Waitaki Districts. However, there are growers located outside these areas.

Central Otago is the largest summerfruit growing area in New Zealand, followed by Hawkes Bay. There is 1144 ha of summerfruit in Otago. Central summerfruit and accounts for 59% of the planted summerfruit orchards. Others summerfruit regions include Hawkes Bay (31%), north of Auckland, Marlborough, and Canterbury (10% combined)[3]. Importantly, Summerfruit New Zealand have advised that 85% of cherry orchards are in the Central Otago District. Cherries are a high value crop and Central Otago is a critical cherry growing area.

The Waitaki District area includes a wide variety of fruit and vegetable crops are grown. These include yams, carrots, courgettes, leeks, cabbage, pumpkin, potatoes, lettuce, broccoli, cauliflower, silverbeet, spring onions, celery, leafy greens, salad greens, brussel sprouts, tomatoes, asparagus, cucumber, apples, pears, nectarines, peaches, plums, blackcurrants, raspberries, strawberries and cherries.

1.2. Summerfruit

Summerfruit, includes cherries, apricots, nectarines, peaches and plums.

About half of the summer fruit area in New Zealand is used to grow cherries. Cherries are 70% exported. The other summerfruit are mainly grown for the domestic market: Nectarines (100% domestic), peaches (97% domestic) and plums (99% domestic) and apricots (70% domestic).[4]

The New Zealand (NZ) cherry industry has been undergoing significant expansion with production more than doubling since 2013. One of the key features of the Central Otago region is the high diurnal range (DRT). This is the difference between daytime and night-time temperatures. Due to the continental type climate in Central Otago, the DRT is large and is thought to positively contribute to increasing the sweetness of Central Otago cherries. This also assists with the firmness and crunch of the fruit which enhances the flavour, taste and general appeal to the consumer, particularly in the Asian markets.

---

[1] www.freshfacts.co.nz/files/freshfacts-2021.pdf
[2] Agricultural and horticultural land use | Stats NZ
[3] https://www.summerfruitnz.co.nz/industry/regions/
[4] www.freshfacts.co.nz/files/freshfacts-2020.pdf

NZ cherries are able to hold a consistent price of 50% or more over cherries from key competitors (i.e. Chile). To retain this market, it is of critical importance to the industry that the focus remains on a premium high value cherry.

1.3. Pip fruit

Pip fruit refers to the apple and pear industry.

There is 470ha[5] of pip fruit production in Central Otago, up from 427 hain 2017.[6] Otago is the third largest production area of pip fruit in New Zealand, after Hawkes Bay and Tasman. Approximately 67% of New Zealand's apple crop is exported each year.[7]

New Zealand is one of the most efficient producers of apples in the world – producing 61 tonnes per hectare (compared to an international average of 23.4 tonnes per hectare).[8]

1.4. Fresh vegetables

Vegetable production occurs mainly in North Otago – Oamaru and Kakanui areas. There is approximately 428ha of vegetable growing in the Otago region[9] and there can be slight variations year to year due to crop rotation.

Dunedin and surrounds – including Mosgiel, Taieri and Stirling have previously been vegetable growing hubs, however, land used for vegetable production in Otago has halved in the last twenty years[10].

1.5. Post-harvest facilities

Packhouses and other post-harvest facilities enable crops to be appropriately washed and packed according to consumer and market specification.

Export markets have packing and import health standard requirements specific to each receiving country.

Fresh produce has a short-shelf life. Time is a critical factor to ensure produce reaches consumer in best condition and quality.

Post-harvest facilities and packhouses need to be located close to orchards and crops they specialise in packing to ensure produce is packed and handled in the most appropriate methods for each crop. Proper packing and post-harvest treatment of produce such as apples and cherries can help manage shelf-life and quality issues.

1.6. Horticultural Research

Plant and Food research have two sites in Otago and a third site based in Gore[11].

The Dunedin site is co-located in the chemistry department at Otago University. Research interests include bioactive natural products, Taonga native species and fast analytical methods. There are three staff based at this site.

The Clyde site is an important site for perennial research. Part of this research includes research orchards and is based over an area of 57ha. Research areas include breeding, bio

---

[5] Apple and Pear Board grower data.
[6] www.freshfacts.co.nz/files/freshfacts-2020.pdf
[7] www.freshfacts.co.nz/files/freshfacts-2020.pdf
[8] https://www.tupu.nz/en/fact-sheets/apples-and-pears

[10] Fresh Facts – 2001 - 2021
[11] Locations · Plant & Food Research (plantandfood.com)

protection and production systems. There are nine full time staff employed here as well as several casual staff. Key crops include kiwifruit, summerfruit and pip fruit crops.

1.7. Economic contribution of horticulture

In total, the horticultural sector accounts for approximately 4% of the Otago regions GDP.[12]

The area in summerfruit has grown considerably since the 2017 statistics. The expected short-term growth will mean that in a few short years the area in summerfruit will have effectively doubled.[13]

In total the investment in the combined fruit and vegetable sector and its ancillary post harvest facilities is over half a billion New Zealand dollars. This off farm industry is a significant contributor to and a significant employer in the Otago economy. The summerfruit and wine grape growing sectors are significant from a New Zealand perspective

2. Freshwater and Horticulture

Water is used throughout the horticultural production process; from growing the crops, washing, and processing produce for market, to fighting frosts (some fruits). To service these activities, the industry requires enough water supply at specific times, particularly in summer.

For some crops, such as vegetables that are grown above ground and fruit with skins that may be eaten, the quality of the irrigation water is important to manage food safety risks.

All horticultural operations result in discharges, these are mainly non-point source discharges associated with rainfall or with irrigation. Non-point discharges can be managed with good irrigation practices, and land and fertiliser management to reduce the contaminant loading of discharges.

2.1. Abstractions

Reliable, good quality water is fundamental to growing. Horticultural production requires significant investment, and it is commonly accepted that water reliability in excess of 95% is required to sustainably provide for these investments.

Central Otago, where many horticultural operations are based, is typically drier and has low rainfall, in addition the soils tend to be stony and free-draining. Land being irrigated does not receive enough rainfall to ensure crop survival.[14]

Summerfruit and pip fruit production – of which there is a high prevalence of in the Otago region, are long-term operations. Tree-crops are planted with a long-term view as once in place a tree cannot be moved. All of the key requirements for fruit production at a site need to be secure and planned for at the time of planting. This means an orchard's future is reliant on having secure water, climate planning, and investment into key infrastructure such as frost protection, irrigation and artificial crop protection structures.

Water is a fundamental input to any horticultural operation. As tree-crops cannot move, plans for water, water efficiency and investment into irrigation systems are key considerations for growers.

---

[12] S Ford Evidence pORPS
[13] Summerfruit NZ
[14] Irrigation in New Zealand : IrrigationNZ

2.1.1. HARVESTING, STORAGE, AUGMENTATION AND RECHARGE

While horticultural crops are efficient users of water compared with pastoral irrigators, the need for a reliable supply of water for horticultural crops is higher than for pastoral farming, because pastoral agriculture is not solely dependent on irrigation and has alternative means of providing the feed to produce the gains made from irrigation

Water harvesting, and storage for direct use or augment or recharge is a method than can provide the irrigation reliability required by horticultural crops with lesser impacts on freshwater outcomes.

2.1.3 CROP SURVIVAL WATER

Crop survival water is a sub-set of a consent holders' abstraction limit that is available between primary and secondary low flow cease-take thresholds for the sole purpose of avoiding plant death or plants sustaining damage to the degree that they require removal.

The provision for crop is analogous to "survival water" for livestock farming but applies to the rootstock of permanent horticultural crops. The provision of this water is very important for the horticulture growers because unlike farmers, growers are unable to move the crops in times of drought or provide an external food source to maintain farm viability.

When regional plans[15] provide crop survival water within an appropriate 'boundary' – this enables an economic value to be met, this achieves efficient allocation, and enables ecological objectives to be met. It also provides for the irrigation value of reliability – which is particularly critical to horticultural growers.

2.1.2. IRRIGATION

There are three main types of irrigation used in orchards in Otago:

Overhead sprinklers: These can be used for frost protection and for irrigation of crops. Some operations have frost fans in place as well as use overhead sprinklers. The use of irrigation for frost fighting works via the latent heat of fusion. When liquid becomes solid, or molecules change state, energy is released. Continual application of water is required to ensure this method of frost protection is effective and can be used to protect against frosts down to -6 degrees Celsius.[16] If the water supply stops, heat is lost, and refrigeration occurs.[17] Frost fans work by drawing down warmer air from the invection layer into the orchard and are effective for protecting against frost down to -2 degrees Celsius.[18] Often the two systems can be run in conjunction with one another.

Under canopy sprinklers: These are spaced evenly between trees to water the root system of trees. Irrigation lines can be subsoil or above soil.

Drip-line irrigation: Drip-line Irrigation is a considerable investment but is considered the most efficient method of irrigation in terms of water use. Many drip-line systems are run in conjunction with smart tools and telemetry, so water use is monitored in real-time and precise.

---

[15] Root Stock /Crop Survival Water is provided within Tasman, Hawkes Bay, Gisborne, Auckland and Northland Regions.
[16] Microsoft Word - 2022-02-01 Field Notes-Frost Protection.docx (rainbird.com)
[17] Frost protection using sprinklers: how it really works – wineanorak.com
[18] Review-of-District-Plan-Frost-Fan-Provisions-2022.pdf (hortnz.co.nz)

While less common, there are a very small number of orchards using a moveable aluminium pipe system for irrigation. This tends to be in small orchard blocks and is considered a rare exception rather than common baseline.

The fundamental requirement of water has resulted in large focus and investment into water efficiency in growing operations. Without water a horticultural operation cannot operate. Plants cannot grow with an absence of water.

Greater water security and reliability should be offered to those who demonstrate greater efficiency with water use. Greater water security and reliability can create incentive for water users to prioritise water efficiency and infrastructure upgrades in their operations.

One approach to encourage greater focus on water efficiency in site development is to enable use of frost fans, artificial crop protection structures and under cover growing systems such as Cravo[19]. These systems tend to support horticultural growing and greater water efficiency, however can challenge the traditional view of what an orchard can look like[20]. We believe in areas, such as Otago, where water availability is under pressure and limited, an enabling approach to industries that demonstrate water efficiency and technologies that further refine water use needs to be prioritised.

2.2. Discharges

Freshwater receiving environments in the region are under pressure from discharges of point source and non-point source discharges. Discharges are an inherent part of horticultural food production. Accounting for the discharges and understanding the level of horticultural production that target attribute states can accommodate is essential.

2.2.1. SEDIMENT

Sediment can be released during the construction phase of orchards, which can be managed though erosion and sediment control practices. In the operation phases of orchards, this loss of sediment is predicted to be low.

There is relatively small area of cultivated vegetable growing land in Otago. Cultivation for vegetable growing can result in elevated sediment loss, the risk of sediment loss from cultivated land can be managed through erosion and sediment control practices.

2.2.2. NUTRIENTS

Orchards use relatively small quantities of fertiliser, managing fertiliser and irrigation together is critical to ensure plant uptake and minimise losses to the environment.

In supporting outdoor vegetable growing, there is research underway through the Sustainable Vegetable Systems research project[21]. This research is improving the way vegetable nutrient uptake and loss is represented in modelling. The project is also developing decision support tools for growers.

Indoor vegetable growing is a very efficient growing system with minimal discharges. Nutrients are periodically discharged to land.

2.2.3. E. COLI

[19] Establishing and operating a sweet cherry orchard in Central Otago. | Rural Leaders
[20] What Goes In Must Come Out. | Rural Leaders
[21] https://www.plantandfood.com/en-nz/article/working-with-the-industry-on-sustainable-vegetable-systems-svs

Some orchards and vegetable operations may include stock, but generally stock numbers within orchards and vegetables are minimal. *E.coli* losses from horticulture are nil or negligible.

2.2.4. CROP ROTATION

Crop rotation is an inherent and essential part of sustainable and regenerative commercial vegetable growing Consents and Freshwater Farm Plans for commercial vegetable growing must allow growers to consent and plan for their owned and leased land.

Consenting commercial vegetable growing as a stand-alone activity requires a hybrid discharge land-use consent (RMA Section 9 and Section 15). The freshwater management unit is the smallest spatial unit that commercial vegetable growing can be managed at.

The specific location of the properties used for commercial vegetable growing within the freshwater management unit must be able to change during the life of the consent.

2.2.5. CODES OF PRACTICE AND GAP FARM PLANS

The horticulture sector has numerous Codes of Practice supporting good management practices for discharges (Erosion and Sediment Control, Nutrient, Glasshouse Nutrients, Vegetable Wash Water, Minimising Soil Movement from Vehicles). The GLOBAL GAP and NZGAP farm planning framework provide a robust system of assurance for verifying on-farm practice, The NZGAP Environmental Management Systems add-on, provides a comprehensive framework for managing water quality impacts from growing operations.

PART 2

Submission

3. Food production, food system and food security for NZ

New Zealand and our Pacific Island neighbours are too remote to import many fresh vegetables from elsewhere in the world. Most vegetables that New Zealand imports are processed. In 2019, the most imported vegetables were preserved tomatoes and frozen potatoes.[22]

The vast majority of vegetables in NZ are produced for the domestic market, with most vegetable crops being over 90% for the domestic market. The notable exception being onions, of which are 85% exported[23].

New Zealand also has an important role in exporting fresh vegetables to the Pacific Islands. For example, in 2016, 76% of total exported potatoes went to Fiji, 87% of exported kumara and 82% of exported cauliflower, 75% of exported cabbage went to the Pacific Islands. This demonstrates that NZ has an important role in the food security of our Pacific Islands.[24]

Some fruit crops such as apples, kiwifruit and citrus travel well, and can be both exported and imported. Other fruit crops are perishable and cannot travel as far. Cherries, which are predominately grown for export, are often air-freighted to premium Asian markets.

Many fresh fruit crops grown for the domestic market are perishable, such as summer fruit and berries, and are therefore more challenging to transport to New Zealand.

Horticultural regions function as part of a national food system, with different crops being harvested at different times in different regions.

Tangata whenua have had a long history of cultivating crops closer to population centres or locating population centres / pā near abundant resources. Different parts of New Zealand were suited for growing different crops and varieties, there was an economy through trade of crops and resources between areas[25].

3.1. Otago's significance within the New Zealand food system

Otago fruit production plays an important role in the availability of seasonal fruit. Generally, harvest begins in the North Island areas and then finishes in Otago. This lengthening of the season is important as it means fruit such as apricots, plums, nectarines, peaches and cherries are available for four to five months rather than six weeks if all production was based in a single area.

The extended growing season achieved by an early harvest in the North Island, and then Otago, means the rolling harvest season enables New Zealand producers to secure access to export markets.

---

[22] www.freshfacts.co.nz/files/freshfacts-2020.pdf
[23] www.freshfacts.co.nz/files/freshfacts-2020.pdf
[24] https://wits.worldbank.org/CountryProfile/en/Country/WSM/Year/2019/TradeFlow/Import/Partner/all/Product/16-24_FoodProd
[25] Maori Gardening: An archaeological perspective - Louise Furey (doc.govt.nz)

Similarly, for domestic markets summerfruit, such as nectarines and peaches grown in Otago, supply New Zealand consumers in an extended season - ensuring fruit is available after the North Island harvest season is finished. This regional food system supports a resilient and reliable domestic food system.

Within this national food system, the Central Otago area within the Otago region stands out as being, without doubt, nationally significant for horticultural food production.

While the horticultural area in summerfruit and pipfruit production has grown in Otago, the horticultural area in vegetable production has declined over the past twenty years.

The decline of commercial vegetable production in the Otago region means much of the year-round produce needed to sustain the local population is produced in other regions and transported into the area. This means that Otago needs to be aware and mindful of what decisions are made in neighbouring production regions as this can have a significant impact on the availability of fresh produce for its population.

3.2. Food security

Food, and in particular vegetables and fruit, are essential human health needs.

Low vegetable and fruit consumption is associated with increased risk of developing some cancers, type 2 diabetes, cardiovascular disease, and obesity.[26]

Data from the New Zealand Health Survey indicates that in 2018/19 and 2019/20, only 33 percent of adults in New Zealand met the combined fruit and vegetable intake guidelines (3+ vegetables, 2+ fruit servings per day), and this has been decreasing over time. [27]

The price of meeting micronutrient requirements is very expensive in New Zealand compared to other countries. Without changing the land use, the situation is unlikely to get better and could get worse.[28] Affordability is a key factor in why people eat less than the recommended intake of fruit and vegetables. If fruit and vegetable growing cannot expand to meet the growing demand with an increased population, the reduced availability of vegetables and fruit and an increased price would impact on the health of the most vulnerable people.[29]

Otago University has recently modelled the potential health impacts of increased vegetable prices related to freshwater regulation, preventing vegetable growing area expansion. (Due to grandparenting and/or pastoral nutrient allocation frameworks). This study found that an increased in vegetable prices of 43 - 58 percent,[30] would result in a loss of 58,300 – 72,800 Quality Adjusted Life Years and health costs of $490 -$610 million across the population. [31]

~~[32][33]~~

[26] www.health.govt.nz/system/files/documents/publications/adults-dietary-habits-oct22.pdf
[27] www.health.govt.nz/system/files/documents/publications/adults-dietary-habits-oct22.pdf
[28] Moore, D., Barton, B., & Young , M. (2019). The value of local vegetable production. Sapere.
[29] Ibid.
[30] 2018 Deloitte The New Zealand Food Story, Pukekohe Hub
[31] Cleghorn, Cristina. 2020. The health and health system costs of increasing vegetable prices over time. Wellington: University of Otago, 2020.
[32] ~~Labour intensive, % of wages~~
[33] ~~NZGAP data~~

The Regional Policy Statement and in particular freshwater policy should seek to prioritise the health of people by supporting the resilience of the domestic food system.

4. Transition to a low emissions economy

In the context of greenhouse gas emissions reduction targets, the Paris Agreement highlights the importance of food production and food security, recognising the "fundamental priority of safeguarding food security …" and noting the need to adapt and foster resilience and lower emissions, in a manner that does not threaten food production. This same consideration is relevant to resource management more broadly.

4.1. Food production in a low emissions economy

The emissions trading scheme was established as market instrument for managing emissions. The experience of the glass house sector has been that the Emissions Trading Scheme (ETS) price has not driven reductions in emissions, because currently there are few viable alternatives for heating glass houses. The glasshouse sector is at risk of becoming economically unviable due to ETS costs. If growers no longer produce these crops in NZ, this will result in lesser variety of fruits and vegetables available to NZ consumers, and substitution with imported products.

It is our opinion, that the transition to developing indoor growing and outdoor food systems that have lesser emissions, will require an integrated approach, that includes behaviour change, investment in research, infrastructure, and technology as well as regulatory signals. The proposed Otago Regional Policy statement has a part to play with respect to strategic policy directions for enabling food production in the transition to a low emissions economy within Otago.

4.2. Enabling land use change to horticulture

Diversification to horticulture presents an opportunity to reduce emissions while increasing food production, as identified by the Climate Change Commission.

'*Ināia tonu nei: a low emissions future for Aotearoa'* includes the assumption (in the Demonstration Path) that 2,000 ha of land will be converted to horticulture per year from 2025 and notes that the Commission expect this could increase if "*barriers – such as water availability, labour, supply chains and path to market – are addressed*". Opening up more opportunities for conversion to lower emissions production systems and land uses, including horticulture, is listed as a critical outcome.[34]

The advice also notes that further land use change from livestock agriculture into horticulture and forestry (from 2021, additional 3,500 ha per year converted from dairy) would be required to meet the more ambitious end of the 2050 methane target if new technology does not come through.

The Regional Policy Statement in particular freshwater policy, should seek to support transition to low emissions food production.

[34] https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa/

5. Climate Change Adaptation and Natural Hazards

The way we manage water will be critical to the way we adapt to climate change and manage risks from natural hazards.

Our freshwater management for climate change adaptation and natural hazards will need to respond to changes in rainfall patterns and changes in the frequency of droughts and floods. Our response will include augmenting and recharging our waterbodies from harvested flows, storing water for irrigation and drinking, reusing water for urban activities, managing risks from fluvial and coastal flooding including decisions around what land we choose to drain, protect or retreat from.

The Resource Management Amendment Act 2020 made changes to Section 61 and 66, to include as matters to have regard to when developing Regional Policy Statement and Regional Plans: *'any national adaptation plan made in accordance with section 5ZS of the Climate Change Response Act 2002*. 'The Draft National Adaptation Plan has a goal of embedding climate resilience in government strategies and policies and has a strong emphasis on collaboration[35].

The Regional Policy Statement and particular freshwater policy should take an integrated approach to climate adaption and natural hazard risk management, to optimise benefits to urban and rural communities and wider economic, social and cultural well beings.

6. Highly Productive Land

The NPS Highly Productive land has the objective highly productive land is protected for use in land-based primary production, both now and for future generations.

The NPSHPL also requires that identification and management of highly productive land is undertaken in an integrated way that considers the interactions with freshwater management and urban development.

For future generations, it is critical that Highly Productive Land (HPL) is protected from the continual trend of cumulative loss and loss of productive capacity due to reverse sensitivity and competition for natural resources. Any protection of HPL from inappropriate subdivision, must also recognise its value for current and future generations for food production and enable its use for food production.

Multiple factors make land 'highly productive' beyond just soil – this makes providing a clear policy for HPL important. Summerfruit and pip fruit orchards do not require LUC 1-3 land to be productive. The free draining soils encompassed in other LUC classes allow better growing conditions for summer fruit and pipfruit orchards. The combination of unique climate in Central Otago[36] and free-draining soils is what contributes to this being an ideal area for cherry production in particular.[37] The highly productive soils that are not LUC I, 2, 3 need to be recognised and managed though this Reginal Policy Statement.

[35]://environment.govt.nz/assets/publications/Draft-national-adaptation-plan.pdf
[36] Otago Climate book WEB 2021.pdf (niwa.co.nz)
[37] Establishing and operating a sweet cherry orchard in Central Otago. | Rural Leaders

The Regional Policy Statement should take an integrated approach to freshwater management that recognises the value of highly productive land and prioritises and supports the use of highly productive land for primary production.

7. Freshwater Visions

The regional value of food production is expressed specifically in the Visions of four of the five Freshwater Management Units.

- Clutha Mata-au FMU;
- North Otago FMU;
- Taieri FMU; and
- Catlins FMU.

Achieving these freshwater visions requires a policy framework that recognises and supports food production.

The Regional Policy Statement in particular freshwater policy, should recognise food production, food supply and food security as issues that are promoted and considered alongside other uses for essential human health, when making trade-offs that will inevitably be required to meet natural environmental limits. This is particularly relevant in peri-urban areas where there is competition for resources from urban growth.

8. Te Mana o te Wai

8.1. The first obligation to the health of water

Te Mana o te Wai establishes a hierarchy of obligations. The first priority is to the health and wellbeing of water bodies and freshwater ecosystems.

The six principles of Te Mana o te Wai provides guidance on who makes resource management decisions and the matters to be considered.

HortNZ supports Kai Tahu's position that each waterway, has its own mauri, and as such, approaches to each waterway should be approached individually when assessing freshwater outcomes and limits.

8.2. The second obligation to human health

The second priority obligation under the Te Mana o te Wai framework is the health needs of people (such as drinking water)

Food, and in particular vegetables and fruit, are essential human health needs.

HortNZ seeks that the production of vegetables and fruit for domestic supply are recognised within the second priority obligation of the Te Mana o te Wai hierarchy.

The recent high court decision relating to the Specified Vegetable Growing Area Policy in the NPSFM 2020 notes "Continuity of supply in fresh vegetables is important for national food security and human health"[38].

The Te Mana o te Wai principles most relevant to providing for the health needs of people are Manaakitanga, and Care and Respect.

The principle of Manaakitanga incudes 'generosity and care for freshwater and for others'. The principle of Care and Respect includes 'care for freshwater in providing for the health of the nation'

The term 'nation' within the care and respect principle indicates freshwater decisions, need to consider both the local and national scale health benefits that are achieved through catchment activities, and '*providing'* for the discharges and allocations that support the health of the nation.

New Zealand is geographically isolated. We cannot import most of the fresh fruit and vegetables our people need to eat, because most fruits and vegetables are too perishable to be efficiently transported to New Zealand.

New Zealand's national food system relies on reciprocity between regions, and a responsible approach to the management of natural resources to provide for the health of the nation.

Trade, manaakitanga and reciprocity underpinned the traditional approach to trading of goods. Horticultural production has had a long-history of having certain crops and varietals being produced in some areas and traded to other areas[39].

The principles of Manaakitanga and Care and Respect express that care for freshwater is part of how the health of the nation is provided for. However, the application of this principle is not limited to human health associated with in-stream freshwater values such as swimming and collecting mahinga kai from within waterbodies.

According to Kai Tahu in the series of mahinga kai, there was a base level of knowledge in Māori communities with specialist knowledge held by Tōhunga. A base level of knowledge related to caring, harvest and cultivation of crops for consumption and rongoa māori[40]. This supports the position that horticulture for domestic supply should be included in the second obligation as essential to human health.

Under clause 3.2.2.c.ii of the NPSFM, Councils must apply the hierarchy of obligations to the National Objectives Framework, this includes applying the hierarchy of obligations to limit setting.

Enabling communities to provide for their social, economic, and cultural wellbeing in a manner consistent with the NPSFM, requires that second and third priority obligation activities are differentiated, and that the concept of health under the second obligation includes the health of the nation.

Recognising fruit and vegetables within the second priority obligation of Te Mana o te Wai, doesn't negate the need for fruit vegetable growers to manage their environmental effects through good management practices and to operate within the freshwater limits of the catchments they are located within.

---

[38] MUAŪPOKO TRIBAL AUTHORITY INC v MINISTER FOR ENVIRONMENT [2022] NZHC 883 [29 April 2022]
[39] Maori Gardening: An archaeological perspective - Louise Furey (doc.govt.nz)
[40] Mahinga Kai web series - Te Rūnanga o Ngāi Tahu (ngaitahu.iwi.nz)

HortNZ seeks that the Proposed Otago Regional Policy Statement acknowledge the national importance of the summer fruit sector in Otago in supporting national food security and the health of the nation, by including a new issue statement for Food Production, Food Supply and Food Security.

Otago consumers rely on growers elsewhere in New Zealand for most of their year-around fresh fruit and vegetables. The vegetable sector in Otago has contracted and is not large enough to support the nutritional needs of the Otago population.

The people of Otago will rely on other Regional Policy Statements, when they apply the principles of Manaakitanga, and Care and Respect to make sufficient provision to produce enough fruit and vegetables to supply fresh fruit and vegetables to regions such as Otago, that have less favourable climates for year-around growing, within the freshwater limits of the water bodies they exercise the principles of Mana Whakahaere and Governance over.

The value of domestic food supply in resource allocation decision making, has been recognised within a series of policy instruments including: NPSFM specified vegetable growing areas; Waikato PC1 Policy 3; Horizons PC2 Policy 14-6; Canterbury PC7 section 42A reply, Policy 4.36A.

8.2.1. THE THIRD OBLIGATION TO SOCIAL, CULTURAL AND ECONOMIC WELLBEING.

The third hierarchy of Te Mana o te Wai is the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

Except for food produced for the domestic market, most food production and primary production more generally is managed within the third priority obligation of Te Mana o te Wai, as this primary production for export supports wider social, economic, and cultural well-beings.

The Regional Policy Statement in particular freshwater policy, should recognise that essential human health needs such as vegetables and fruit for domestic supply should be recognised within the second priority obligation of the Te Mana o te Wai hierarchy.

PART 3

Submission on proposed Otago Regional Policy Statement 2021

Without limiting the generality of the above, HortNZ seeks the following decisions on the proposed Otago Regional Policy Statement as set out below, or alternative amendments to address the substance of the concerns raised in this submission and any consequential amendments required to address the concerns raised in this submission.

Additions are indicated by bolded underline, and deletions by strikethrough text.

Provision	Support/ oppose	Reason	Decision sought
PART 1 INTRODUCTION AND GENERAL PROVISIONS			
PART 2 – RESOURCE MANAGEMENT OVERVIEW			
SRMR–I5 – Freshwater demand exceeds capacity in some places - Statement	Support in Part / Oppose in Part	Amend the statement to not that rural land uses are changing to meet food production demands of growing urban populations and will continue to change to respond to climate change.	Amend SRMR–I5 as follows: *In water-short catchments, freshwater availability may not be able to meet competing demands from the health and well-being needs of the environment, the health and well-being needs of people, and the ability of people and communities to provide for their social, economic and cultural well-being. Many of these catchments are also experiencing urban growth, changes in rural land uses <u>to meet food supply demands of growing urban populations and will continue to change to respond</u>*

			to climate change, and increased demand for hydro-electric generation.
SRMR–I5 – Freshwater demand exceeds capacity in some places - Context	Support in Part / Oppose in Part	Water is necessary for food production. This is linked to population growth food demand and an essential human health need not an economic use.	Amend SRMR–I5 as follows: *Population growth, food production and land-use intensification in urban and rural environments can create increased demand for freshwater for human consumption, irrigation and other economic uses. Freshwater resources in some places are reaching, or are beyond, their sustainable abstraction limits. However, there continues to be debate in the community about how historical freshwater allocations can be adjusted to achieve a balance of economic, environmental, social and cultural needs.*
SRMR–I5 – Freshwater demand exceeds capacity in some places - Impact Snapshot	Support in Part / Oppose in Part	Water is necessary for food production. This is linked to population growth food demand and an essential human health need not an economic use. The social impacts discussion covers freshwater needs in regard to essential urban growth needs. It also covers recreational uses. There is no discussion	Amend the impact snapshot to specifically the health and safety issues associated with water demand including drinking, sanitation and food production. Link the impact snapshot to the FMU vision statements seeking outcomes whereby innovative and sustainable

		on water as an essential human health need and its link to food production as another essential human health need. This is addressed in SRM-I6 in the context of water quality but not in terms of demand and how this then must influence allocation decisions. Pursuant to Part 2 Section 5 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–* In not addressing this relationship the section fails to identify the value of Aotearoa's food production system and Otago's regional value of food production expressed through the vision of four the five Freshwater Management Units: • Clutha Mata-au FMU • North Otago FMU	land and water management practices support food production and improve resilience to the effects of climate change.

		• Taieri FMU • Catlins FMU Those vision statements seek outcomes whereby innovative and sustainable land and water management practices support food production and improve resilience to the effects of climate change.	
SRMR–I6 – Declining water quality has adverse effects on the environment, our communities, and the economy - Context	Support in Part / Oppose in Part	The context usefully identifies that water quality affects a wide range of environmental health factors, human survival needs, and cultural, social, recreational, and economic uses.	Amend Context as follows: *…Water quality affects a wide range of environmental health factors, human <u>health and</u> survival needs, and cultural, social, recreational, and economic uses.*
SRMR–I6 – Declining water quality has adverse effects on the environment, our communities, and the economy - Impact Snapshot	Support in Part / Oppose in Part	Water is necessary for food production. This is linked to population growth food demand and an essential human health need not an economic use. The social impacts discussion covers freshwater needs in regard to essential urban growth needs. It also covers recreational uses. There is no discussion on water as an essential human health need and its link to food production as another essential human health need. This is addressed in SRM-I6 in the	Amend the impact snapshot to specifically the health and safety issues associated with water quality including drinking, sanitation, and food production. Link the impact snapshot to the FMU vision statements seeking outcomes whereby innovative and sustainable land and water management practices support food production and improve resilience to the effects of climate change.

		context of water quality but not in terms of demand and how this then must influence allocation decisions. Pursuant to Part 2 Section 5 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–* In not addressing this relationship the section fails to identify the value of Aotearoa's food production system and Otago's regional value of food production expressed through the vision of four the five Freshwater Management Units: • Clutha Mata-au FMU • North Otago FMU • Taieri FMU • Catlins FMU	

		Those vision statements seek outcomes whereby innovative and sustainable land and water management practices support food production and improve resilience to the effects of climate change. Declining water quality in terms of effects on food production and food security has a direct effect on human health and not an indirect effects as stated in the impact snapshot on economics.	
SRMR–I6 – Declining water quality has adverse effects on the environment, our communities, and the economy - Impact Snapshot / Economic	Support in Part / Oppose in Part	Identify that water pollution can impact on the food production needs of clean water for irrigation and processing. The discussion elevates other matters above essential human health needs i.e. property values and recreation.	Amend SRMR–I6 as follows: *Water pollution (from nutrients, chemicals, pathogens and sediment) can have far-reaching effects potentially impacting food production, tourism, property values, commercial fishing, recreational businesses, and many other sectors that depend on clean water.*
PART 3 – DOMAINS AND TOPICS			
LF – Land and Freshwater			

LF-WAI-P1 – Prioritisation	Support in Part / Oppose in Part	The hierarchy of obligations in Te Mana o te Wai defines three priorities: First, the health and well-being of water bodies and freshwater ecosystems. Within this priority there is no discretion in the interpretation. The priority is clear. The second priority is the health needs of people. Here some discretion in interpretation or the ability to further define Te Mana o te Wai is provided. The NPSFM-2020 states this includes uses *such as* drinking water. The ORPS extends the second priority to also address the wellbeing of people i.e. beyond health. It also proposes to include interacting with water through ingestion (such as drinking water and consuming harvested resources) and immersive activities (such as harvesting resources and bathing), The reference to the health needs of people is important. It aligns with the purpose of the RMA sustainable management *means managing the use,*	2)second, the health and well-being needs of people, te hauora o te tangata; interacting with water through ingestion (such as ~~drinking water and~~ consuming harvested resources), <u>essential human health (such as food security and drinking water</u>) and immersive activities (such as harvesting resources and bathing), an

		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–* Essential human health should be defined in the ORPA and means the physiological needs of humans, it includes safe drinking water and sanitation, nutritious food, adequate shelter and warmth. The regional value of food production is expressed through the vision of four the five Freshwater Management Units: • Clutha Mata-au FMU • North Otago FMU • Taieri FMU • Catlins FMU Food to meet the heath needs pf people cannot be grown without water and sits within the second priority of Ter Man o te Wai.	

		The third priority in the hierarchy of obligations in Te Mana o te Wai is the ability of people and communities to provide for their social, economic, and cultural wellbeing now and in the future. Again, there is no discretion in the interpretation. The priority is clear. As per the purpose of the RMA, the health needs of people and communities is a separate but parallel consideration to social, economic and cultural well-being matters. While food production, food supply and food security matters sit within the third priority, clearly the relationship of food production and water to the health needs of people places the values within the second priority.	
LF–WAI–PR1 –Principal reasons	Support in part	The purposes discuss the health and the health of people but appears to imply that the health of people is provided for by economic purpose. We agree that the economy supports humans, health but we think it is of critical importance to differentiate those matters within the second hierarchy that support human	Amend LF–WAI–PR1 as follows: It is only after the health of the water is sustained, and the essential human health of people is provided for, that water can be used for wider social, cultural and economic purposes.

		health, and in particular essential human health.	
LF–VM–O2 – Clutha Mata-au FMU vision	Support in part	Support a vision and objective that in the Dunstan, Manuherekia and Roxburgh rohe of the Clutha Mata-au FMU, innovative and sustainable land and water management practices support food production in the area and reduce discharges of nutrients and other contaminants to water bodies so that they are safe for human contact.	Amend LF–VM–O2 as follows: *(7bii)) innovative and sustainable land and water management practices support food production in the area and* *reduce discharges of nutrients and other* *contaminants to water bodies so that they are safe for human contact <u>and that reduce emissions and improve resilience to the effects of climate change.</u>* *And* *<u>(7cii)</u>* *<u>innovative and sustainable</u> land <u>and water</u> management practices <u>support food production in the area and</u>* *reduce discharges of nutrients and other* *contaminants to water bodies so that they are safe for human contact <u>and that reduce emissions and improve resilience to the effects of climate change.</u>*
LF–VM–O3 – North Otago FMU vision	Support in part	Support a vision and objective that by 2050 in the North Otago FMU: innovative and sustainable land and	Amend LF-VM-O3 as follows:

		water management practices support food production in the area and improve resilience to the effects of climate change.	*(6) innovative and sustainable land and water management practices support food production in the area <u>that reduce discharges of nutrients and other contaminants to water bodies so that they are safe for human contact and</u> <u>that reduce emissions</u> and improve resilience to the effects of climate change.*
LF–VM–O4 – Taieri FMU vision	Support in part	Support a vision and objective that by 2050 in the Taieri FMU, innovative and sustainable land and water management practices support food production in the area and improve resilience to the effects of climate change.	Amend LF-VM-O4 as follows: (8) innovative and sustainable land and water management practices support food production in the area <u>*that reduce discharges of nutrients and other contaminants to water bodies so that they are safe for human contact and*</u> <u>that reduce emissions</u> and improve resilience to the effects of climate change.
LF–VM–O5 –Dunedin & Coast FMU vision	Support in part	Seek similar vision statements related to food production as other FMU's	Amend LF-VM-O5 as follows: (6) <u>innovative and sustainable land and water management practices support food production in the area *that reduce discharges of nutrients and other*</u>

			contaminants to water bodies so that they are safe for human contact and that reduce emissions and improve resilience to the effects of climate change.
LF–VM–O6 –Catlins FMU vision	Support in part	Seek similar vision statements related to food production as other FMU's	Amend LF-VM-O6 as follows: 7) innovative and sustainable land and water management practices support food production in the area *that reduce discharges of nutrients and other contaminants to water bodies so that they are safe for human contact and* that reduce emissions and improve resilience to the effects of climate change.
LF–FW–O8 –Fresh water	Support in part	Support an objective that in Otago's water bodies and their catchments: the health of the wai supports the health of the people and thriving mahika kai. We note this is different to LF–WAI–P1 – Prioritisation where the ORPS has extended priority 2 to the well-being needs of people. The Objective should be consistent.	Amend LF-FM-O8 as follows: (1) the health of the wai supports the health and well-being needs of the people and thriving mahika kai
LF–FW–O8 –Fresh water	Oppose	Oppose the objective that in Otago's water bodies and their catchments:	Delete LF–FW–O8 (2)

		water flow is continuous throughout the whole system. This is not hydrologically possible or representative of a natural hydrological system that will be comprised of a range of waterbodies functioning as ephemeral, intermittent and permanent features.	
LF–FW–P7 – Fresh water	Oppose	Oppose broad objective that states that in terms of Environmental outcomes, attribute states (including target attribute states) and limits ensure that: drinking water are safe for human consumption. The NPSM-2020 Appendix 1B Other Values That Must Be Considered states as follows: Drinking water supply The FMU or part of the FMU can meet people's drinking water needs. Water quality and quantity is sufficient for water to be taken and used for drinking water supply.	Delete LF–FW–P7 **or** Amend LF–FW–P7 – Fresh water as follows: Environmental outcomes, attribute States (including target attribute states) and limits <u>reflect freshwater values, and where appropriate</u> ensure that: (1) the health and wellbeing of water bodies is maintained or, if degraded, improved, (2) the habitats of indigenous species associated with water bodies are <u>maintained and improved</u>~~protected~~ including by providing for fish passage, (3) specified rivers and lakes are suitable for primary contact within the following timeframes: (a)by 2030, 90% of rivers and 98% of lakes and

		Matters affecting the suitability of water for drinking include: a) physical, chemical, and microbiological contamination (for example, bacteria and cyanotoxins, viruses, protozoa and other pathogens) b) any other contaminants identified in drinking water standards issued under the Health Act 1956 or any other legislation c) the effects of contamination on drinking water treatment processes and the safety of drinking water, and its aesthetic value (that is, appearance, taste, and smell). The determination on drinking water needs is a contextual determination i.e., ground or surface water supply, from a tap on a reticulated municipal supply, a direct private take from a stream, from a private bore. Requiring all freshwater bodies to achieve Environmental outcomes, attribute states (including target	(b) by 2040, 95% of rivers and 100% of lakes and (4) mahika kai ~~and drinking water~~ are safe for human consumption, (5) existing overallocation is phased out and future overallocation is avoided, and (6) freshwater is allocated within environmental limits and used efficiently <u>to provide for human health (including drinking water and food security) and wider social, cultural and economic well-being.</u>

		attribute states) and limits that achieve drinking water safe for human consumption is unachievable and unnecessary for the health and well-being of water bodies and freshwater ecosystems.	
LF-FW-P15 – Stormwater and wastewater discharges	Support in Part / Oppose in Part	We seek an additional policy to recognise the NPSHP. The NPSHPL includes a policy that seeks The identification and management of highly productive land is undertaken in an integrated way that considers the interactions with freshwater management and urban development. The NPSHPL objective is to protect HPL for land-based primary production	Amend LF–FW–P15 – Regional plans as follows: g) <u>The use of water sensitive urban design techniques to avoid or mitigate the potential adverse effects on the productivity of primary production on highly productive land related to the cumulative impacts of contaminants on receiving water bodies from the subdivision, use or development of land wherever practicable</u>
LF–FW–M6 –Regional plans	Support in Part / Oppose in Part	LF–FW–M6 –Regional plans states that Otago Regional Council must publicly notify a Land and Water Regional Plan no later than 31 December 2023	Amend LF–FW–M6 – Regional plans as follows:

		and, after it is made operative, maintain that regional plan to: (4) include environmental flow and level regimes for water bodies (including groundwater) that give effect to Te Mana o te Wai and provide for a range of uses and needs. Excluded from the method is the need to provision water for food production and food security. Notably the provision of rootstock survival water and frost protection water is a mechanism provided in most regional plans to ensure continuity of food production, food supply and food security.	*(4) include environmental flow and level regimes for water bodies (including groundwater) that give effect to Te Mana o te Wai and provide for:* *a. the behaviours of the water body including a base flow or level that provides for variability,* *b. healthy and resilient mahika kai,* *c. the needs of indigenous fauna, including taoka species, and aquatic species associated with the water body* *d. the hydrological connection with other water bodies, estuaries and coastal margins,* *e. the traditional and contemporary relationship of Kāi Tahu to the water body, and* *f. community drinking water supplies,* *g. abstraction and discharges to support domestic food security, and*
LF–FW–M6 –Regional plans	Support in Part / Oppose in Part	LF–FW–M6 –Regional plans states that Otago Regional Council must publicly notify a Land and Water Regional Plan no later than 31 December 2023 and, after it is made operative, maintain that regional plan to	*Amend LF–FW–M6* – Regional plans *as follows:* *(5) include limits on resource use that:*

		(5) *include limits on resource use that:* *a. differentiate between types of uses, including drinking water, and social, cultural and economic uses, in order to provide long-term certainty in relation to those uses of available water,* The method would be improved to identify health and wellbeing needs of people (priority 2) as per LF–WAI–P1 – Prioritisation are uses to be differentiated.	*a. differentiate between types of uses, including <u>human health needs (such as drinking wate and food security),</u> and social, cultural and economic uses, in order to provide long-term certainty in relation to those uses of available water,*
LF–FW–M6 –Regional plans	Support in Part / Oppose in Part	LF–FW–M6 –Regional plans states that Otago Regional Council must publicly notify a Land and Water Regional Plan no later than 31 December 2023 and, after it is made operative, maintain that regional plan to *provide for the off-stream storage of surface water where storage will:* The submitter supports the method while noting that the opportunity for on-	Amend LF–FW–M6 as follows: 6) provide for the ~~off-stream~~ storage of surface water where storage will: (a)support Te Mana o te Wai, (b)give effect to the objectives and policies of the LF chapter of this RPS, and (c)not prevent a surface water body from achieving

		stream storage of surface water should not be foreclosed and may be a viable method to achieve outcomes. Noting that on-stream storage may include minor tributaries, and if such storage would meet a, b and c of this policy it should be provided for.	identified environmental outcomes and remaining within any limits on resource use,and
LF-FW-M7 – District Plans	Support in Part / Oppose in Part	We seek wording to align this provision with the NPSFM	Amend LF-FW-M7 as follows: include provisions to protect the ~~avoid the adverse~~ ~~effect o f activities on the significant and~~ outstanding values of outstanding water bodies
LF–FW–AER7	Oppose	LF–FW–AER7 sets down an Anticipated Environmental Result that *Water in Otago's aquifers is suitable for human consumption, unless that water is naturally unsuitable for consumption.*	Delete LF–FW–AER7

		The determination on drinking water needs is a context. Requiring all water in Otago's aquifers is suitable for human consumption, unless that water is naturally unsuitable for consumption is unachievable and unnecessary for the health and well-being of water bodies and freshwater ecosystems. What is important for human health is that people have access to sufficient safe drinking water.	
LF-LS – Land and Soil			
LF-LS- P18 Soil erosion	Support	HortNZ supports the approach to implement management practices to minimise potential for loss of soil to water bodies. HortNZ has developed Erosion and sediment guidelines for vegetable production to assist with such management practices.	Retain LF-LS- P18
LF-LS-P21 Land use and fresh water	Oppose in part	Clause (1) of the policy assumes that reduction of contaminants is required in every instance while the top line of the policy specifies improvement or maintenance.	Amend policy LF-LS-P21 as follows: … (1) <u>Where improvement is required, reduce</u> ~~reducing~~ direct and indirect discharges of contaminants to water from the

			use and development of land, and …
LF–LS–M11 – Regional plans	Support	Support a method that requires Otago Regional Council must publicly notify a Land and Water Regional Plan no later than 31 December 2023 and then, when it is made operative, maintain that regional plan to: *(2) provide for changes in land use that improve the sustainable and efficient allocation and use of fresh water*. This will provide for land use change to horticulture.	Retain as proposed.