

**BEFORE THE ENVIRONMENT COURT
AT AUCKLAND**

ENV-2020-AKL-00087

**I MUA I TE KŌTI TAIAO
I TĀMAKI MAKĀURAU ROHE**

IN THE MATTER of the Resource Management Act 1991
(RMA or the Act)

AND

IN THE MATTER of Proposed Plan Change 1 of the
Waikato Regional Plan

**STATEMENT OF EVIDENCE OF MICHELLE KATHLEEN SANDS (INDUSTRY)
ON BEHALF OF HORTICULTURE NEW ZEALAND**

28 JULY 2023

Solicitors:

Atkins Holm Majurey Ltd
Level 19, 48 Emily Place
Auckland 1010
louise.ford@ahmlaw.nz

Counsel:

T Mijatov
Stout Street Chambers
PO Box 117, Wellington 6140
tiho.mijatov@stoutstreet.co.nz

Contents

EXECUTIVE SUMMARY	3
INTRODUCTION	6
Qualifications and experience	6
Purpose and scope of evidence	7
Overview of Horticulture New Zealand	7
Key concerns with the proposed Plan Change	9
HORTICULTURE IN THE WAIKATO REGION	9
Lower Waikato is Nationally Significant	10
CVP needs to respond to population growth and housing pressure..	11
A reliable and reasonably priced supply of fresh vegetables is essential for the health of New Zealanders	12
A resilient supply of fresh vegetables supports the health of the nation	14
NATIONAL POLICY	16
The NPSFM 2020 and SVGA	16
Letter from Minister for Environment to all Regional Councils.	19
Natural and Built Environment Bill	20
THE HORTICULTURE INDUSTRY SUPPORTS GROWERS TO REDUCE ENVIRONMENTAL IMPACTS	20
Industry Assurance Schemes - GAP	20
THE IMPACTS OF EXISTING VEGETABLE GROWING CAN BE MANAGED	22
FLEXIBILITY TO ROTATE AT THE FMU IS FUNDAMENTAL TO ENABLING CVP	23
VEGETABLE PRODUCTION EXPANSION CAN BE PROVIDED TO SUPPORT FRESHWATER OUTCOMES.	25
FRUIT, BERRIES AND OTHER LOW-INTENSITY HORTICULTURE SUPPORT THE TRANSITION TO THE LOW EMISSIONS ECONOMY	28
AN INTEGRATED APPROACH TO SETTING VISIONS, VALUES, OUTCOMES AND LIMITS	29
PROVISIONS SOUGHT	30
CVP Provisions	30
Fruit and low-intensity horticulture Provisions	31
APPENDIX 1	32

EXECUTIVE SUMMARY

1. 90 percent of vegetables in the Waikato River catchment are grown to feed New Zealanders. If growers cannot grow sufficient vegetables to support the New Zealand population, the price of vegetables will increase, the consumption of vegetables will be reduced, and the health of New Zealanders will suffer.
2. In total, commercial vegetable production (**CVP**) land occupies 0.6% of the total area of the Waikato River catchment and is estimated to account for 2.5% of the diffuse nitrogen load and 0.9% of the phosphorus load and a negligible contribution of *E. coli* and sediment load. Land use change to CVP is predicted to result in water quality improvements for some contaminants.¹
3. The PC1 Decision Version of Policy 3 starts with the words: *Provide for commercial vegetable growing, including the flexibility to undertake crop rotations*. However, the scale of limiting crop rotations in the Decision Version, to the sub-catchment is too inflexible and is likely to result in reduced vegetable production compared to the existing situation.
4. The PC1 Decision Version Policy 3 includes the words: *Recognise the positive contribution to people and communities from commercial vegetable growing*. This positive contribution refers to health benefits associated with vegetable supply for the New Zealand population. But the limitations on expansion severely constrain the ability of vegetable growers to make this positive contribution to people and communities.
5. The economic and farm systems evidence from Mr Ford, explains that CVP is a low-margin activity, and the flexibility to

¹ Statement of Evidence of Gillian Holmes, dated 28 July 2023, paragraphs 11 and 12.

undertake crop rotations, and a multi-contaminant approach to offsetting expansion, is fundamental to ensuring vegetable production is maintained for a growing population.

6. The farm systems evidence from Mr Barber explains that the industry has robust research programmes and risk-based farm planning systems that support growers in managing the risk of diffuse discharges. Mr Ford explains that growers have reduced their fertiliser use in the past ten years.
7. The water quality evidence presented by Mr Easton and Ms Holmes demonstrates that crop rotation at the FMU scale can be provided for with a negligible change in water quality compared with limiting crop rotation to the sub-catchment scale.
8. CVP expansion to serve population growth can be provided for in a manner that is predicted to have very small increases for nitrogen and very small improvements in other contaminants, including *E. coli*, which is closely linked to achieving core freshwater values.
9. The reluctance of regional councils, including Waikato Regional Council, to develop proportionate rules to manage water quality risks from CVP and their propensity to prioritise other activities has led to the need for national direction:
 - (a) Specified Vegetable Growing Area Policy in the NPSFM 2020; and
 - (b) The Natural and Built Environment Bill, requires that the National Planning Framework *must provide direction on enabling the supply of fresh fruit and vegetables.*
10. PC1 was notified before these national policies were developed, but the direction of travel is clear. The Horticulture New Zealand and Pukekohe Vegetable Growers Association appeals provide sufficient scope to ensure PC1 is not a hindrance to future regional plans, which will need to design

environmental limits that provide sufficient flexibility for CVP, so growers can continue to produce fresh vegetables to support the health of New Zealanders.

11. The Horticulture New Zealand and Pukekohe Vegetable Growers Association evidence demonstrates that the provisions recommended by Sue Ruston can provide for CVP in a manner consistent with Te Ture Whaimana.

INTRODUCTION

Qualifications and experience

1. My name is Michelle Kathleen Sands. I am the Manager of Strategy and Policy with Horticulture New Zealand (**HortNZ**). I manage HortNZ's Environment team, which is involved in national, regional and district planning processes across New Zealand. I have worked for HortNZ since 2018.
2. I hold a Bachelor of Science Honours from Victoria University (1995). I have over 20 years of post-graduate experience in environmental management. During this time, I have worked in local government, the voluntary sector, research, consultancy and currently for the horticulture industry.
3. My experience includes developing catchment scale water quality models. I led the water quality assessments, including the development of catchment scale water quality models, used to inform the assessments of environmental effects for Transmission Gully, Puhoi to Warkworth and Warkworth to Wellsford roads. I led the development of catchment scale water quality and hydrological models to inform the National Policy Statement for Freshwater Management (**NPSFM**) limit setting process in the Ruamāhanga, and te Awarua-o-Porirua whaitua processes.
4. My experience includes providing expert witness testimony on water quality and quantity issues at council hearings, Board of Inquiry and Environment Court.
5. In my current role, I provide technical leadership on water policy for HortNZ's involvement in all national and regional freshwater processes. Currently, HortNZ is involved in freshwater planning processes, impacting water quality in Otago, Marlborough, Manawatu-Wanganui, Bay of Plenty, Hawkes Bay and Waikato.

6. I lead HortNZ's involvement in national water policy, particularly providing input into developing the NPSFM, National Environmental Standard for Freshwater and the National Freshwater Farm Plan regulations.
7. I lead HortNZ's policy response on climate change matters. I am a steering Group Member of He Waka Eke Noa.
8. Since beginning my role at HortNZ, I have met with growers across New Zealand to understand better their horticultural operations and how resource management issues impact them.
9. While I am a qualified hydrologist and a water quality scientist, I am not appearing in the capacity of an expert in this hearing. My role in this hearing is as HortNZ's representative and advocate.

Purpose and scope of evidence

10. My evidence explains:
 - (a) The scale and key components of the Waikato horticultural production sector and its national significance;
 - (b) Provides national policy context related to providing and managing horticultural production; and
 - (c) A summary of the HortNZ position on PC1.

Overview of Horticulture New Zealand

11. HortNZ is the industry good body for the horticulture sector, representing growers who pay levies on fruit and vegetables sold either directly by growers to customers or through a post-harvest operator, as set out in the Commodity Levies (Vegetables and Fruit) Order 2013.
12. HortNZ is affiliated with the following local grower's associations: the Pukekohe Vegetable Growers Association,

the Waikato Fruit Growers Association and the Waikato Asparagus Growers Association. Alongside these local associations, several Product Groups representing specific product categories are also affiliated to HortNZ, for example: Vegetables New Zealand Incorporated, Potatoes NZ, Onions NZ and NZ Kiwifruit Growers Incorporated.

Involvement in the proceedings

13. Prior to joining HortNZ I worked for Jacobs and was the lead reviewer of a technical water quality report² that formed part of the HortNZ submission.
14. I presented industry evidence for HortNZ in Block 2 and Block 3 and was involved with the HortNZ appeal.
15. I participated in the meditations in 2022 and 2023.
16. I have worked with growers, Pukekohe Vegetable Growers Association (**PVGA**) and Product Groups to understand the implications of PC1 better and to develop the HortNZ evidence for this hearing.
17. In preparing my evidence, I have read:
 - (a) Plan Change 1 Decision;
 - (b) The evidence and supplementary evidence of Urlwyn Treblico;
 - (c) The evidence and supplementary evidence of Hamish Allen Smith;
 - (d) The New Zealand National Policy Statement for Freshwater Management 2020 (**NPSFM**);
 - (e) The New Zealand National Policy Statement for Highly Production Land (**NPSHPL**);

² Jacobs 2017 Healthy Rivers Plan Change Technical Support for Horticulture New Zealand's Submission.

- (f) The New Zealand Government's Emissions Reduction Plan³;

18. The following statements of evidence on behalf of HortNZ and PVGA:

- (a) Sue Ruston (Planning);
- (b) Stuart Ford (Economics and Farm Systems);
- (c) Andrew Barber (Farm Systems);
- (d) Gillian Holmes (Water Quality);
- (e) Stuart Easton (Water Quality); and
- (f) Grower statements from Mr Makan, Dr Davis, Ms Faulkner, Mr Jivan, Mr Wilcox, Mr Balle, and Ms Deihl.

Key concerns with the proposed Plan Change

19. HortNZ has two key remaining concerns with the PC1, these are:

- (a) the need for the flexibility to rotate at the FMU scale; and
- (b) the need for CVP expansion to keep up with population demand.

HORTICULTURE IN THE WAIKATO RGEION

20. Over 200 growers in the Waikato Region produce over 60 fruit and vegetable crops.³

21. The most significant fruit and vegetables include:

- (a) Potatoes;
- (b) Onions;

³ Data from NZGAP and Zespri July 2023.

- (c) Carrots;
 - (d) Asparagus;
 - (e) Tomatoes (indoor);
 - (f) Brassicas (broccoli, cauliflower and cabbage);
 - (g) Kiwifruit;
 - (h) Berryfruit; and
 - (i) Apples.
22. The CVP growing area in the Waikato catchment is 7,020 Ha. The Lower Waikato FMU contains over 60% of this total growing area.⁴ There are 620 Ha of Kiwifruit orchards.⁵
23. Within the Waikato District, 'horticulture and fruit growing' contributed \$46.2m to GDP in 2018.⁶ This represents a 1.9 percent share of the district's total GDP, compared to a 0.5 percent share of total GDP for 'horticulture and fruit growing' at a national level.⁷
24. The horticultural industry contributes significantly to the local economy. In 2017, the onion industry generated \$29 million revenue in Waikato, accounting for 19 percent of the contribution of onions to the overall national revenue.

Lower Waikato is Nationally Significant

25. 90 percent of vegetables grown in the Waikato River catchment are for domestic supply.⁸ The growing area has particularly important for three reasons:

⁴ Statement of Evidence of Stuart Easton, dated 28 July 2023, paragraphs 28-38.

⁵ Data from Zespri 24/07/2023.

⁶ <https://ecoprofile.infometrics.co.nz/Waikatopercent20District/Gdp/Structure>

⁷ Openwaikato.co.nz .

⁸ <https://www2.deloitte.com/nz/en/pages/primary/articles/case-study-pukekohe-hub.html>

- (a) Over 40% of New Zealanders⁹ live in the combined Auckland and Waikato Regions. The supply of fresh vegetables to this market daily relies on efficient distribution from the Pukekohe hub;
- (b) The fertile soils and mild climate mean this area can produce fresh vegetables year-round. The year-round growing capacity is important when bad weather disrupts the supply from other key growing areas; and
- (c) The mild climate means growers can plant crops, including potatoes, in winter when other growing regions are too cool to plant. Pukekohe supplies potatoes in spring when other regions are not ready to harvest. New Zealand does not import fresh potatoes due to phytosanitary risks.

CVP needs to respond to population growth and housing pressure

- 26. The growing area is under pressure from urban expansion. Mr Easton's evidence outlines that 565 Ha CVP land in Auckland and the Lower Waikato FMU is zoned future urban.¹⁰
- 27. The National Policy Statement for Highly Productive Land (**NPSHPL**) was gazetted after the PC1 decision. The NPSHPL seeks to protect highly productive land for land-based primary production both now and for future generations. The NPSHPL should slow the loss of CVP land to housing, but it does not prevent new urban development on highly productive land. The NPSHPL will not reverse rezoning decisions made before 2022.
- 28. The Waikato Region, particularly the Lower Waikato FMU, provides vegetables for a growing New Zealand population.

⁹ <https://www.stats.govt.nz/tools/2018-census-place-summaries/waikato-region#population-counts>

¹⁰ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 23: 448 Ha in Auckland and 97 Ha in Waikato.

The census predicts that the population of Auckland will grow by 11% and Waikato will grow by 18% by 2030.¹¹

29. When considering the Waikato population only, 1,264 Ha of additional CVP would be required.¹² If the Waikato River catchment were to provide vegetables to supply Auckland's population growth and loss of land to urban in Auckland, 1,877 Ha of additional CVP would be required.¹³

A reliable and reasonably priced supply of fresh vegetables is essential for the health of New Zealanders

30. Despite New Zealand producing vast amounts of meat and milk, the population is deficient in B9, calcium and iron. Most of the B9, calcium and iron produced in New Zealand is exported. New Zealanders rely on domestically produced fruits, vegetables, and grains for most of their B9, calcium, and iron intake.¹⁴
31. Ministry of Health recommends that New Zealanders eat at least three servings of vegetables daily. Only 53 per cent of adults and 45% of children consume enough vegetables to meet their health needs.¹⁵ Insufficient fruit and vegetable consumption is linked to 1,559 deaths (6% of all deaths) per year.¹⁶
32. The price of vegetables is a key determinant in whether people consume enough vegetables to meet their health needs. A study undertaken by Otago University analysed the health impacts of an increase in the price of vegetables. The Otago University study found that if CVP were not able to expand to match population demand, the predicted

¹¹ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 34.

¹² Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 35.

¹³ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 38.

¹⁴ S Smith N, 2023 Sustainable Nutrition Initiative APEC nutrient trade.

¹⁴ Smith N, 2023 Sustainable Nutrition Initiative APEC nutrient trade.

¹⁵ www.health.govt.nz/system/files/documents/publications/childrens-dietary-habits-oct22.pdf and <https://www.health.govt.nz/publication/adults-dietary-habits>

¹⁶ <https://pubmed.ncbi.nlm.nih.gov/16502948/>

vegetable price increase would drive consumers to switch to less healthy and cheaper foods. The health consequences were significant, with a loss of 72,800 Health Adjusted Life Years and a cost of 610 million to the health system associated with 2.5% cumulative price increase.¹⁷

33. Mr Ford discusses the margins of vegetable growing and the market dynamics of commercial vegetable production.¹⁸ Despite the price of vegetables being out of reach for many New Zealanders, the margins for vegetable growing are very low for some rotations.¹⁹ Vegetable growers are price takers and cannot always pass on their costs to consumers. The main way that the price of vegetables increases is when supply is disrupted, fewer vegetables are produced, and the supermarkets increase the consumer's price to match supply, because there is lower demand for higher-priced vegetables.
34. In the years since PC1 was notified, we have seen significant disruption to the supply of vegetables, leading to price increases. These disruptions include COVID-19 and increased extreme weather. As well as these factors, the complexity of consenting vegetable growing in several regions has led to difficulty in establishing new vegetable-growing areas elsewhere in New Zealand. The area of vegetable growing in New Zealand is contracting, and the number of vegetable-growing businesses is reducing.
35. As outlined in the evidence of Mr Ford, PC1 has the potential to impact the production of vegetables and, thus, the supply and the price of vegetables in four main ways:²⁰
 - (a) If nutrient supply (i.e. fertiliser) is reduced beyond that required to achieve marketable yields, the economic

¹⁷ Cleghorn C, 2020 The health and health system cost impacts of increasing vegetables prices over time.

¹⁸ Statement of Evidence of Stuart Ford, dated 28 July 2023, paragraph 41-45.

¹⁹ PerrinAg 2023 Horticulture typology modelling for the Freshwater Management Tool.

²⁰ Statement of Evidence of Stuart Ford, dated 28 July 2023, paragraph 46.

viability of vegetable growing is threatened. Without viable businesses, there is no supply of vegetables. This point is further discussed in the evidence of Mr Jivan for PVGA.

- (b) If crop rotations are not provided for, soil health will be harmed and pests will increase, reducing crop yields and vegetable supply. This point is further discussed in the grower evidence of Dr Davis PVGA.
- (c) If rotations do not provide enough flexibility for growers to maintain cropping areas across sub-catchments, the vegetable growing area of individual businesses will contract, leading to reduced vegetable supply. This point is further discussed in the evidence of Mr Wilcox for PVGA.
- (d) Mr Ford explains that if the expansion of vegetable growing to keep up with population growth depends on offsetting nitrogen leaching, expansion of the CVP rotations is unlikely to be economically viable for most rotations. Growers will only choose to expand if it is viable. If growers do not expand, vegetable supply relative to population will be reduced.

A resilient supply of fresh vegetables supports the health of the nation

- 36. Te Ture Whaimana Objective J recognises the strategic importance of the Waikato River to New Zealand's social, cultural, environmental and economic well-being and requires the restoration and protection of the health and well-being of the Waikato River.²¹

²¹ <https://waikatoriver.org.nz/wp-content/uploads/2019/03/Vision-and-Strategy-Reprint-2019web.pdf>

37. The PC1 decision accepts that vegetables are important to the health and well-being of people and that land suitable for growing vegetables is limited.²²

Te Mana o Te Wai

38. In the 2014 NPSFM the description of Te Mana o te Wai recognises the connection between water and the broader environment – Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people).²³
39. In the NPSFM 2020, the Te Mana o Te Wai definition has been further developed to include the hierarchy of obligations and six principles.
40. The first priority is to the health and wellbeing of water bodies and freshwater ecosystems.
41. The second priority obligation under the Te Mana o te Wai framework is the health needs of people (such as drinking water).
42. Food, particularly vegetables, is essential for human health needs. In the High Court decision on the Horowhenua SVGA, the decision states:²⁴ *Continuity of supply in fresh vegetables is important for national food security and human health.*
43. Recognising fruit and vegetables within the second priority obligation of Te Mana o te Wai, doesn't negate the need for vegetable growers to manage their environmental effects through good management practices and to operate within

²² The Hearing Panel's Recommendation Report, paragraph 1628.

²³ Policy AA1 https://environment.govt.nz/assets/Publications/Files/nps-freshwater-amended-2017_0.pdf

²⁴ *Muaūpoko Tribal Authority Inc and Te Rūnanga o Raukawa Inc v Minister for Environment* [2022] NZHC 883.

the freshwater limits established for the catchments they are operating within.

44. 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.
45. Except for food produced for the domestic market, most food production and primary production, are managed within the third priority obligation of Te Mana o te Wai.
46. The six principles of Te Mana o te Wai provides guidance on who makes resource management decisions and the matters to be considered.
47. The Te Mana o te Wai principles most relevant to providing for the health needs of people are Manaakitanga, and Care and Respect.
48. Care and respect is defined as *the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.*
49. The people of New Zealand will rely on decision-makers in Waikato to apply the principles of Manaakitanga, and Care and Respect in a way that supports growers in the Waikato to produce vegetables to supply to other regions that have less favourable climates, less fertile soils and more urbanisation.

NATIONAL POLICY

50. The reluctance of regional councils, including Waikato Regional Council, to develop proportionate rules to manage water quality risks from CVP and their propensity to prioritise other activities has led to the need for national direction.

The NPSFM 2020 and SVGA

51. This NPSFM 2020 includes two specified vegetable growing areas. One of this is the Pukekohe Growing areas which is

partly located in the Lower Waikato FMU. For SVGA, the NPSFM requires:

When implementing any part of this National Policy Statement as it applies to an FMU or part of an FMU that is in, or includes, all or part of a specified vegetable growing area, a regional council must have regard to the importance of the contribution of the specified growing area to: (a) the domestic supply of fresh vegetables; and (b) maintaining food security for New Zealanders.

52. When applying the NPSFM to the SVGA FMUs, a regional council may choose to set a target attribute state below the bottom line, if achieving a bottom line would compromise the domestic supply of fresh vegetables and maintaining food security for New Zealanders. Modelling undertaken by MPI²⁵ to support the SVGA policy indicated that achieving bottom lines in some of the Lower Waikato sub-catchments without compromising the supply of fresh vegetables would require land use change for other activities.
53. In response to the SVGA, a Kawenata has been agreed between an integrated catchment management plan group - Te Roopuu Mahia te Mahi. This group comprises: *Te Tautara o Pukekohe/the Pukekohe ICMP Governance Group*: Ngaati Te Ata, Ngaati Tamaoho, Ngaati Tiipa, Waikato-Tainui, and the Crown representatives of Ministry for the Environment and Ministry of Primary Industries; *Vegetable growers*: represented by the PVGA and HortNZ; and *Councils*: Auckland Council and Waikato Regional Council.

²⁵ www.mpi.govt.nz/dmsdocument/42078-Pukekohe-Modelling-Report

54. Te Roopuu Mahia te Mahi has established a vision for the Pukekohe Growing catchments - including those within the Lower Waikato FMU. The vision is provided below:²⁶

Te Ora o te Wai: a healthy freshwater environment flowing within and from Pukekohe where its wellbeing is protected and enhanced while supplying fresh vegetables for the health and wellbeing of the peoples of Aotearoa/New Zealand.

55. The process of developing the Kawenta and the joint projects being developed to deliver on this vision, as part of Te Roopuu Mahia te Mahi, are discussed in the evidence Mr Balle for PVGA.

56. While I acknowledge that PC1 was notified prior to the NPSFM 2020, the Environment Court Decision on the Northland Regional Plan, concluded the NPSFM 2020 was a matter to which the decision should have regard:²⁷

We conclude from this that the NPS-FM 2020 is a matter to which we should have regard and if there is a difference in outcome from the application of the NPS-FM 2020 rather than the NPS 2014, we need to consider whether it is more appropriate to achieve that outcome than that under the NPS-FM 2014.

57. The key elements of the NPSFM 2020 that the decision makers for PC1 should have regard to are:

- (a) Te Mana o te Wai, and in particular activities that support the health needs of people, and the principles of Care and Respect and Maanakitanga; and

²⁶ TE ROOPUU MAHIA TE MAHI/WORKING GROUP 2022: PUKEKOHE INTEGRATED CATCHMENT MANAGEMENT PLAN PROCESS Kawenata. Agreed by: MPI, MfE, Auckland Council, Waikato Regional Council, Ngaati Te Ata, Ngaati Tamaoho, Ngaati Tiipa, Waikato-Tainui, PVGA and HortNZ.

²⁷ *Minister of Conservation & Ors v Northland Regional Council* [2021] NZEnvC 001.

- (b) The Specified Vegetable Growing Area policy, relevant to the Lower Waikato FMU.

Letter from Minister for Environment to all Regional Councils.

- 58. In April 2023, the Minister for Environment wrote to Regional Councils, including Waikato Regional Council,²⁸ requesting information about council intentions to provide for vegetable production when implementing the NPSFM 2020.
- 59. This letter specifically asks about mechanisms the council is developing to enable:
 - (a) vegetable growers to practice crop rotation, moving their production (and associated discharges) from one property to another – for example allowing a grower to lease land in different properties within a freshwater management unit;
 - (b) an expansion of the total area of production – noting this will almost certainly lead to an increase in Nitrogen-related discharges, and potentially other discharges, from new land brought into vegetable production.
- 60. In the context of PC1, decision-makers should consider how provisions can be designed so as not to compromise the supply of fresh vegetables and food security. As identified in the letter from the Minister for Environment and in HortNZ's evidence for this hearing, there are two critical issues that if not provided for, may compromise the supply of fresh vegetables:
 - (a) Crop rotation at the FMU; and
 - (b) Expansion of CVP to meet population demand.

²⁸ Statement of Evidence of Urlwyn Trebilco, dated 26 May 2023, Appendix 3.

Natural and Built Environment Bill

61. The Natural and Built Environment Bill (**NBE Bill**) is one of three Acts that will replace the Resource Management Act (**RMA**).
62. The NBE Bill introduces a National Planning Framework. Within that National Planning Framework, the NBE Bill identifies matters that National Planning Framework must provide direction on, which includes:

enabling the supply of fresh fruit and vegetables.
63. PC1 is operating under the RMA; however, the current national policy under the NPSFM and direction signalled in the NBA Bill, is clear that the supply of vegetables is a matter of national importance.
64. To the degree that PC1 can, it should develop provisions that do not frustrate the clear intention of future policy to enable vegetable growing.

THE HORTICULTURE INDUSTRY SUPPORTS GROWERS TO REDUCE ENVIRONMENTAL IMPACTS

65. The horticulture sector supports growers in reducing their environmental impact through research, developing codes or practices, tools and industry assurance programmes. Mr Barber explains more about the industry research and implementation in his evidence.

Industry Assurance Schemes - GAP

66. Many growers sell their products directly to consumers because of the relationship growers have with the market. The horticulture sector has had farm-level assurance schemes, Good Agricultural Practices (**GAP**), for over 20 years.
67. GAP schemes are independently audited assurance schemes which provide a pathway for growers to demonstrate compliance with regulatory and market requirements via independent audits against recognised standards.

68. GAP certification is generally a requirement for market access. A grower cannot sell to a New Zealand supermarket or export if they are not GAP certified. This means that almost all horticultural growers in New Zealand are GAP certified (whether via GLOBAL GAP, Zespri GAP or NZ GAP), and growers are highly motivated to achieve and maintain certification.
69. GLOBAL G.A.P is a farm assurance programme that sets voluntary standards for the certification of agricultural products.²⁹ The programme began in 1997 to develop an independent certification system for good agricultural practice.
70. NZGAP is an industry assurance scheme administered by HortNZ (however, operates independently) on behalf of all growers. NZGAP certification provides growers with a credible assurance framework, which enables them to meet multiple supermarket and regulatory obligations.

NZGAP Environmental Management System Add-on

71. While the core GAP standards include environmental requirements, the requirements within the core standards are not aligned enough with New Zealand regulation to deliver on regulatory FEPs or Freshwater Farm Plans.
72. NZGAP has developed the Environmental Management System (**GAP EMS**) add-on. The GAP EMS is available for growers of all horticultural crops.
73. The GAP EMS add-on is specifically designed to meet regulations and includes a regional guide to reflect regional differences in regulation. The EMS has been recognised in Canterbury and Gisborne as a vehicle for delivering FEPs in those regions.

²⁹ https://www.globalgap.org/uk_en/

74. NZGAP and HortNZ have been working closely with MfE to trial an update to of the GAP EMS to deliver on the Freshwater Farm Plan regulations, and RMA Part 9A.
75. The NBE Bill (subpart 2 Freshwater Farm Plans) provides a pathway for the audit and certification systems of programmes such as GAP to be recognised for freshwater farm plans. HortNZ promotes the recognition of the use of industry programmes such as GAP as an efficient way of achieving environmental outcomes.
76. 70% of the CVP land within Waikato is registered with the GAP EMS. Growers in the Lower Waikato have been a focus of HortNZ extension, and approximately 100% of CVP land in the Lower Waikato is registered with the GAP EMS.³⁰ Not all growers that are registered with the GAP EMS have been audited yet, but they are underway in developing an FEP to meet regulatory requirements (see **Appendix 1** for a map of CVP land in the GAP EMS).
77. We support improved alignment between the FEP requirements in PC1 and the Freshwater Farm Plan Regulations.

THE IMPACTS OF EXISTING VEGETABLE GROWING CAN BE MANAGED

78. Since the PC1 Decision, the Overseer review highlighted the limitations of the Overseer. The review's findings largely echo the concerns raised by Mr Ford in the council hearings. Due to known concerns about Overseer, HortNZ sought an alternative method of managing and monitoring diffuse discharges for CVP.³¹
79. Diffuse discharges from CVP can be reduced to as low as practicable with risk based FEPs, that draw on industry

³⁰ NZGAP data July 2023.

³¹ Statement of Evidence of Stuart Ford, dated 28 July 2023, paragraph 50.

research, the GAP schemes and tools such as the Sustainable Vegetable Systems (**SVS**) crop budget and the CVP risk scorecard.

80. The CVP Risk Scorecard discussed by Mr Barber draws on industry research to drive risk-based on-farm decisions that reduce sediment and nutrient losses. The risk method drives block scale action but assesses risk for the overall rotation at the FMU scale.³²
81. Mr Baber discusses how the risk scorecard can be delivered through Farm Plans. The tool is still in development but has been tested by growers who farm on 2,500 Ha, or 35% of CVP land in the Waikato catchment.³³
82. Mr Ford explains that growers have reduced their use of fertiliser in the past 10 years because they are adopting a range of mitigations that reduce the amount applied while maintaining a saleable yield.³⁴

FLEXIBILITY TO ROTATE AT THE FMU IS FUNDAMENTAL TO ENABLING CVP

83. Rotation is a method of managing environmental impacts and must be provided for.
84. The Decision Version of Policy 3 starts with the words: *Provide for commercial vegetable production including the flexibility to undertake crop rotations on multiple and/or changing properties as follows:...*
85. The sub-catchment approach does not provide that flexibility and does not deliver the intent of this policy.
86. One of the critical elements of the PVGA appeal, to which HortNZ is s274 party, is the need to rotate at the FMU.

³² Statement of Evidence of Andrew Barber, dated 28 July 2023, paragraph 40 – 52.

³³ Statement of Evidence of Andrew Barber, dated 28 July 2023, paragraph 48.

³⁴ Statement of Evidence of Stuart Ford, dated 28 July 2023, paragraph 55.

87. Waikato Regional Council offers no evidence supporting their assumption that rotation at the sub-catchment is adequate to maintain existing CVP production. Waikato Regional Council have no water quality evidence suggesting a greater risk of providing for CVP rotation at the FMU scale.
88. Dr Davis for PVGA explains that crop rotation is also important for soil health and integrated pest management. Integrated pest management is a key tool in reducing dependence on agrichemicals.
89. Mr Ford explains that while soil health and integrated pest management require a variety of crops to be grown in sequence, most growers specialise in fewer crops. This specialisation means that most growers must work with other growers or farmers to maintain soil health.³⁵
90. As outlined by Mr Wilcox for PVGA the sub-catchments within the lower Waikato are too small to provide workable rotations.
91. Mr Easton demonstrates that while the location of individual growers' land is dynamic and changes location over time, the cumulative footprint of CVP is much less variable. Mr Easton highlights that 97 Ha of CVP in the Waikato is zoned urban, and that this land will need to move onto new land. The load associated with this area of displaced CVP is 0.03% of the Lower Waikato FMU.³⁶
92. Ms Holmes's analysis concludes that there is negligible change in water quality associated with providing flexibility for rotations to move at the FMU scale compared with the sub-catchment scale.³⁷

³⁵ Statement of Evidence of Stuart Ford, dated 28 July 2023, paragraph 68 – 79.

³⁶ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 23 - 24.

³⁷ Statement of Evidence of Gillian Holmes, dated 28 July 2023, paragraph 12.

VEGETABLE PRODUCTION EXPANSION CAN BE PROVIDED TO SUPPORT FRESHWATER OUTCOMES.

93. The Decision Version of PC1 *recognises the special contribution to people and communities from commercial vegetable growing*; the decision is clear that this 'special contribution' is related to the health benefits of the production of vegetables for the domestic market.³⁸ The decision was also clear that the contribution CVP makes to people and communities needs to be subject to Te Ture Whaimana.³⁹
94. The Decision Version of PC1, and the amendments proposed by Mr Trebilco propose a maximum CVP expansion of 389 Ha. This is 20% of the increase in vegetable demand that is likely to be needed to provide sufficient vegetables to feed our growing population.
95. Mr Trebilco, acknowledges the inadequacy of PC1 in providing for sufficient CVP to support the New Zealand population's need for vegetables, but determines this issue should wait to be addressed in a future plan.⁴⁰
96. Mr Trebilco relies on the HortNZ evidence presented in Block 3 to support the CVP expansion cap in rule 3.11.4.8.⁴¹
97. Mr Trebilco dismisses the increase CVP areas sought in the HortNZ appeal on the basis that there is no land suitable for CVP outside of those sub-catchments put forward in the Block 3 HortNZ evidence.⁴²
98. Mr Easton explains that his analysis for Block 3 was simply restricted to the Waikato District, and there is land suitable for CVP elsewhere in the Waikato catchment.⁴³

³⁸ The Hearing Panel's Recommendation Report, paragraph 1162.

³⁹ The Hearing Panel's Recommendation Report, paragraph 1201.

⁴⁰ Statement of Evidence of Urlwyn Trebilco, dated 26 May 2023, paragraph 189.

⁴¹ Statement of Evidence of Urlwyn Trebilco, dated 26 May 2023, paragraph 375.

⁴² Statement of Evidence of Urlwyn Trebilco, dated 26 May 2023, paragraph 374.

⁴³ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 67.

99. Mr Easton also explains that his water quality modelling assumes CVP will expand onto LUC I and II because it is the most productive land. However, only 55% of CVP in the Waikato River catchment is located on LUC I and II in the existing situation. LUC III is recognised as suitable for CVP in the Land Resource Information System Data Dictionary. Mr Easton explains that the main factors in determining the water quality impact of CVP expansion onto LUC III or any other land, are the previous land use and the sensitivity of the receiving environment.⁴⁴
100. Mr Easton, who undertook the analysis for HortNZ in Block 3, explains that the CVP caps in Rule 3.11.4.8 Table 1 are a misapplication of his analysis. He explains his analysis was suitable for a catchment scale water assessment, but the calculation of the area caps is entirely dependent on Overseer modelling.⁴⁵ The Overseer review found that Overseer should not be used to set fixed numeric limits within regulation. Mr Trebilco states he does not support Overseer being used to establish rule gateways in PC1.⁴⁶ The CVP expansion caps in Rule 3.11.4.8, which are a gateway between the discretionary and non-complying activity.
101. I am part of the technical advisory group for the Overseer review. My understanding of the limitations and appropriate use of Overseer has improved due to my involvement in this technical advisory group. I no longer support using Overseer derived limits as a consenting gateway as proposed in my Block 3 evidence or the HortNZ appeal.
102. Mr Ford, does not support the use of Overseer in setting regulatory thresholds.⁴⁷

⁴⁴ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 57-64.

⁴⁵ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 65 – 83.

⁴⁶ Statement of Evidence of Urlwyn Trebilco, dated 26 May 2023, paragraph 371.

⁴⁷ Statement of Evidence of Stuart Ford, dated 28 July 2023, paragraph 50, 51.

103. As outlined in the evidence of Mr Easton, he considers the NIWA model an appropriate tool for analysing the cumulative water impacts of the PC1 policy frameworks.⁴⁸
104. The Government's response to the Overseer review concluded that using Overseer within catchment modelling is appropriate:
- As regional councils continue their regional plan development consistent with their obligations under the NPS-FM 2020, they can continue to use Overseer (as necessary) as an input to catchment-level modelling subject to the due diligence checks as outlined in this report.*⁴⁹
105. The catchment analysis undertaken by Mr Easton, while not appropriate to set numeric limits in the Plan, can be used to understand the water quality impacts of CVP expansion. He calculates the nitrogen increases of providing for 1,877 ha of CVP expansion at an FMU scale range from 1.7% to 0.1% and 0.5% at the Waikato River scale.⁵⁰
106. Ms Holmes concludes that the calculated increase in nitrogen load associated with a cap of 1,877 Ha of CVP expansion distributed at the FMU scale, would have a negligible effect on the water quality of the Waikato River, particularly when consideration is given to the potential improvements in other contaminants.⁵¹
107. In Ms Holmes opinion, there is minimal difference between the water quality risks between setting an FMU or sub-catchment CVP expansion cap, given that any expansion will be subject to assessment against Policy 3 and 5.⁵²

⁴⁸ Statement of Evidence of Stu Easton, dated 28 July 2023, paragraph 75.

⁴⁹ www.mpi.govt.nz/dmsdocument/46357-The-Government-response-to-the-findings-of-the-Overseer-peer-review-report

⁵⁰ Statement of Evidence of Stu Easton, dated 28 July 2023, Table 4.

⁵¹ Statement of Evidence of Gillian Holmes, dated 28 July 2023, paragraph 68.

⁵² Statement of Evidence of Gillian Holmes, dated 28 July 2023, paragraph 67.

FRUIT, BERRIES AND OTHER LOW-INTENSITY HORTICULTURE SUPPORT THE TRANSITION TO THE LOW EMISSIONS ECONOMY

108. All horticulture other than CVP has relatively low diffuse discharge of nitrogen, phosphorus, sediment and microbial pathogens, and can be described as a low-intensity farming activity.
109. We anticipate fruit, berries, indoor growing and asparagus in the Waikato will be a permitted activity. Most low-intensity horticultural farms are smaller than 20 Ha.
110. There are some larger orchards, and these tend to be kiwifruit orchards.
111. The NZGAP EMS, described by Andrew Barber, is commonly used by vegetable growers but also by growers of all horticultural crops.
112. There are 98 Kiwifruit growers in the Waikato catchment. Zespri is supporting all kiwifruit growers in the Waikato to develop Freshwater Farm Plans, drawing on the research that the kiwifruit sector has been undertaking to improve their understanding of how to manage nitrogen losses through matching nutrient supply with crop demand.
113. Fruit is a low greenhouse gas emissions activity.⁵³
114. The RMA Amendment Act 2020 includes the requirement to have regard to the Emissions Reduction Plan and the National Adaptation Plan when making and amending regional policy statements, regional plans and district plans.⁵⁴
115. Analysis to support He Waka Eke Noa has shown there is a strong link between achieving freshwater outcomes and reducing agricultural emissions. The link between freshwater

⁵³ <https://www.zespri.com/en-NZ/sustainability-carbon-footprint>

⁵⁴ See the RMA Amendment Act 2020 section 18 amending section 66 of the RMA.

and climate requires an integrated approach to freshwater and climate policy.⁵⁵

116. The Emissions Reduction Plan includes a key action to transition to lower emissions land uses and practice.⁵⁶
117. Supporting land use diversification to lower emissions land uses such as horticulture is critical to New Zealand achieving 2050 emissions reduction targets within the Climate Change Response Act.

AN INTEGRATED APPROACH TO SETTING VISIONS, VALUES, OUTCOMES AND LIMITS

118. As outlined in the evidence of Ms Holmes, she supports a multi-contaminant approach to managing the effects of land uses and focusing the freshwater limits to achieve improvements aligned with achieving a range of freshwater values and visions over time.⁵⁷
119. The assessment of Ms Holmes is consistent with the Decision, that found:⁵⁸

In this respect, we find that giving effect to the objectives and Te Ture Whaimana may be better achieved by seeking significant reductions in (say) E. coli but a marginal increase in N in sub-catchments where N is not 'over-allocated'. As we have already pointed out, PC1 has an over-emphasis on N reduction, even where the other contaminants are of much greater concern from a water quality and river health perspective.

120. HortNZ accepts that the focus of PC1 is to drive the uptake of good management practices rather than to drive land use

⁵⁵ <https://hewakaekenoa.nz/wp-content/uploads/2022/06/FINAL-He-Waka-Eke-Noa-Recommendations-Report.pdf>

⁵⁶ <https://environment.govt.nz/assets/publications/Aotearoa-New-Zealands-first-emissions-reduction-plan.pdf>

⁵⁷ Statement of Evidence of Gillian Holmes, dated 28 July 2023, paragraph 8.

⁵⁸ The Hearing Panel's Recommendation Report, paragraph 1627.

change. However, PC1 must make some provision to support land use change aligned with achieving Te Ture Whaimana.

121. Te Ture Whaimana, includes the following objective:

The recognition that the strategic importance of the Waikato River to New Zealand's social, cultural, environmental and economic wellbeing requires the restoration and protection of the health and wellbeing of the Waikato River

122. We consider making provision for some land use change to horticulture to be aligned with Te Ture Whaimana.

123. The Waikato is strategically important in supporting the health of New Zealanders, due to the supply of fresh vegetables. Due to the very small scale of vegetable production, and due to its low risk for pathogen discharges, CVP expansion to support the population can occur in a manner that supports the overall objectives of Te Ture Whaimana.

124. Land use change to fruit production will likely result in improved water quality outcomes, particularly for pathogens. Land use change to fruit production is an important part of New Zealand's transition to a low-emissions economy and will underpin New Zealand's social, cultural, environmental and economic well-being in the future.

PROVISIONS SOUGHT

125. The provisions we seek reflect improved knowledge about the limitations of Overseer. Otherwise, the changes we seek are designed to ensure that CVP can practically operate, and that consent officers and future applicants know how to grant, monitor, and enforce consents.

CVP Provisions

126. A tailored approach for CVP is necessary to ensure freshwater limits within PC1 protect enough discharge allocation for CVP,

so growers can produce enough vegetables to support the nation's health.

- 127. We support the controlled activity status for existing CVP to provide certainty that CVP can continue.
- 128. We support managing the effects of CVP with risk-based Farm Environment Plans.
- 129. We support the recognition of the role of industry in supporting growers with FEPs, developing research and codes of practice and assurance.
- 130. We support better alignment between PC1 and Freshwater Farm Plan regulations.
- 131. We seek that CVP is consented as an area within an FMU. We accept a hybrid discharge/land use consent is appropriate.
- 132. We support discretionary activity status for the expansion of CVP, limited to highly productive land, capped at 1,877 ha distributed at the FMU scale.

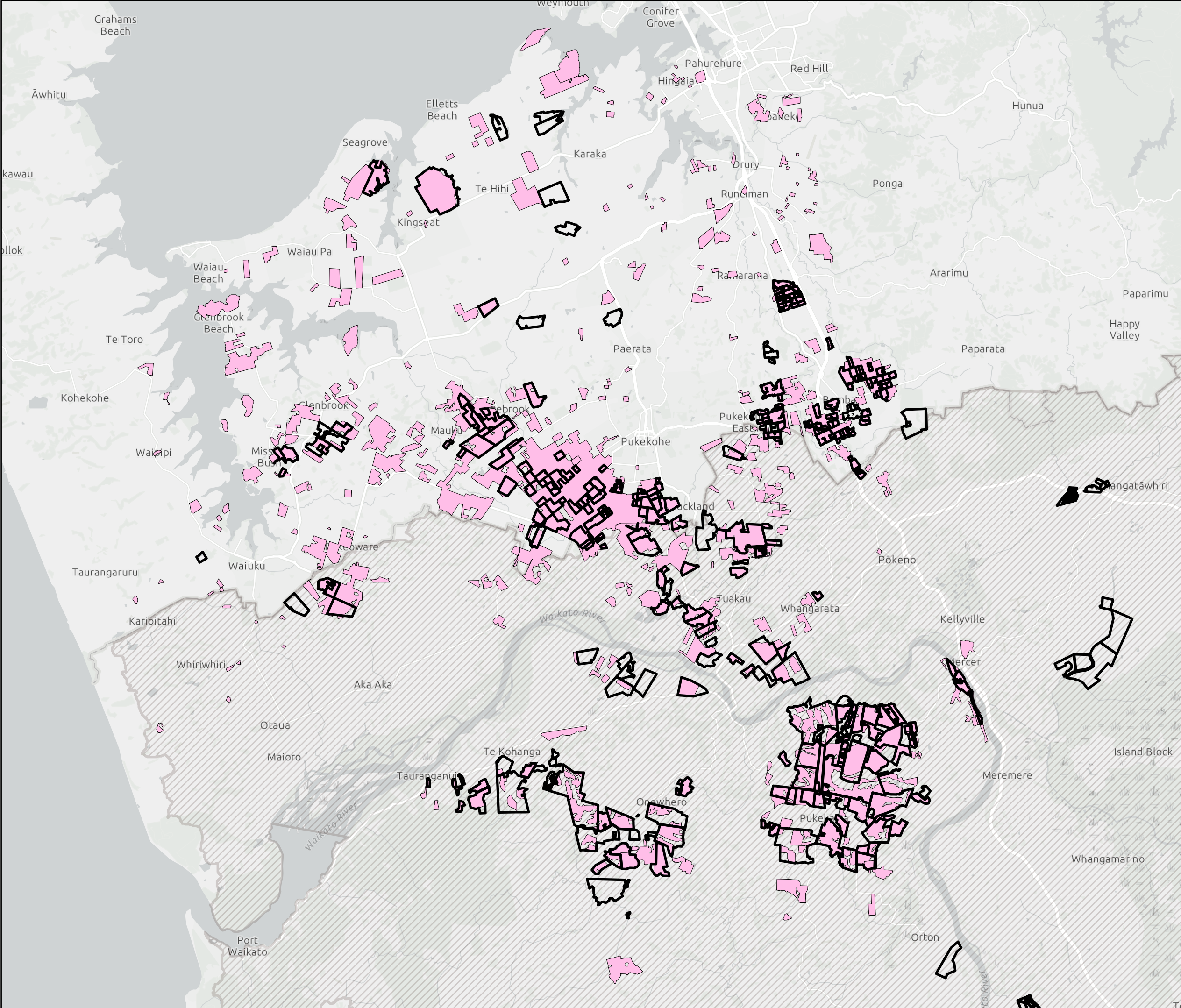
Fruit and low-intensity horticulture Provisions

- 133. We support the permitted activity pathway for low-intensity horticultural farming activities, as an appropriate pathway for low intensity horticulture.
- 134. We support managing the effects of fruit and other low-intensity horticulture with risk-based Farm Environment Plans and minimum standards.

Michelle Kathleen Sands

28 July 2023

APPENDIX 1



- Legend
- Lower Waikato River FMU
 - LCD v5 Short rotation cropland
Waikato 4765 ha
 - EMS Farm Boundaries
Waikato 5183 ha

