

Industry Statements On Draft Freshwater Management Units

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To: Bay of Plenty Regional Council

Name of Submitter: Horticulture New Zealand with support from New Zealand Kiwifruit Growers Inc and New Zealand Avocados

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General Comments

INTENSIVE HORTICULTURE

A general theme running through the FMU stories is that horticulture is a high intensive activity or is high in nutrient leaching. All horticulture other than commercial vegetable production has relatively low diffuse discharge of phosphorus, sediment, and microbial pathogens, and low to moderate nitrogen discharges and can therefore be described as a low-intensity horticultural activity.

HortNZ is concerned that the term intensive horticulture has been used without evidence or explanation of council's understanding of what 'intensive' means. From a horticulture perspective, intensive horticulture means a high level of contaminants into waterways.

Reported modelled nitrogen (N) loss results to council for kiwifruit show an average of 23 Kg-N/kg/ha yr for the region with a range of 13-41 Kg-N/kg/ha yr¹ when average nitrogen input (115 kg-N/ha/yr) and historical rainfall conditions are assumed. While there may be individual orchards in some catchments that are above the range, they would be in the minority.

To further support that fruit is not an intensive activity, Waikato Regional Council Plan Change 1 has differentiated fruit from high intensive horticultural and farming activities.

NATURAL AND BUILT ENVIRONMENT BILL (NBE BILL)

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

- Enabling the supply of fresh fruit and vegetables.

Council should develop provisions that do not frustrate the clear intention of future policy to enable the supply of fresh fruit and vegetables.

FISH RETENTION POLICY

HortNZ supports a minimum flow regime that supports reduced trout habitat retention however we have engaged a hydrologist to understand better what council is proposing and how this would apply in all freshwater management units (FMU), particularly those that do not have large trout habitats. HortNZ is still working through this proposed policy and will provide our response to council at a later date.

VISIONS

There seems to be inconsistency in what the visions cover. For example some cover surface water only, some cover all of the surface water in the catchment and some cover

¹ Zespri project SN23321 by Plant and Food Research.

groundwater as well. Given that the NPSFM requires visions to be set for freshwater (which includes surface water and groundwater) then presumably council will address this prior to releasing the draft plan change.

In addition some visions for water quality are written so that it looks like the water quality in all waterways needs to be enhanced. Presumably the intent is to maintain water quality and enhance it where necessary, rather than to set a very high bar of improving all of the water quality in an FMU. In this respect, it is important that the visions make sense when read together with the environmental outcomes, because the visions (which will become RPS outcomes) need to overarch and not be inconsistent with the environmental outcomes (which will become regional plan objectives).

Draft Freshwater Management Unit

BOUNDARY

HortNZ has made specific comments on each FMU boundary in Appendix One.

FMU SUMMARY

Zespri is currently working on updated GDP figures for each FMU and will provide this data to council. It's important to note that the GDP figures provided by council for horticulture in the booklets for all FMU's are incorrect.

HortNZ has made specific comments on each FMU summary in Appendix One.

Draft Visions

For each FMU, council has included a food production vision in either option A or B. HortNZ does not fully support either option however does support the value of *'innovative and sustainable land and water management practices support food production and food processing'* where stated in both options.

In HortNZ response² to council's visions/values consultation last year, a vision was sought *that recognised food production 'food production in the region/FMU is supported by innovative and sustainable land and water management practices'*.

We sought that freshwater management in the Bay of Plenty FMUs (where food production is present) is designed so the FMUs will:

- Support the health of New Zealanders, through supporting a resilient domestic food system
- Support the health of wider environment through climate change mitigation and adaptation
- Support the community social and economic well-being through recognising the importance of highly productive land for primary production.

² <https://www.hortnz.co.nz/assets/Environment/RegionalUpdates/03-Bay-of-Plenty/BOP-Freshwater-NPSFM-Submission-1.pdf>

In response to the draft visions proposed, HortNZ is pleased that council has recognised the importance of food production however notes there are no vision options to support the transition to low emissions land use, support the use of highly productive land or improve resilience to the effects of climate change and flood mitigation.

The National Policy Statement for Highly Productive Land (NPSHPL) has one objective, being:

Objective: Highly productive land is protected for use in land-based primary production, both now and for future generations.

There are nine policies to achieve the objective. Particularly relevant to the matters being considered here is policy two:

Policy two: The identification and management of highly productive land is undertaken in an integrated way that considers the interactions with freshwater management and urban development.

Policy 4 of the NPSFM states that freshwater is managed as part of New Zealand's integrated response to climate change.

HortNZ supports a draft vision that provides for climate change, transition to low emissions land use and acknowledgement of highly productive land.

Additionally, HortNZ notes that while including a geothermal vision is not applicable for all FMUs, where a vision has been included, this does not provide for the taking of water for irrigation and frost protection.

As water take pressures increase, deeper bores will be drilled that might access geothermal water in other FMUs. An issue to consider for council.

HortNZ has made specific comments on each FMU draft visions in Appendix Two.

Draft Values and Environmental Outcomes

Council has included the same Irrigation, Cultivation, and Production of Food and Beverages value and Commercial and Industrial Use value (apart from Waiotaha and Ohiwa) in all draft FMU stories.

The most important values to horticulture are:

- Irrigation, cultivation, and production of food and beverages
- Commercial and Industrial Use

Draft Irrigation, cultivation, and production of food and beverages value

The Irrigation, cultivation, and production of food and beverages value in Appendix 1B of the National Policy Statement for Freshwater (NPSFM)³ states that :

³ <https://environment.govt.nz/assets/publications/National-Policy-Statement-for-Freshwater-Management-2020.pdf>

The FMU or part of the FMU meets irrigation needs for any purpose.

Water quality and quantity is suitable for irrigation needs, including supporting the cultivation of food crops, the production of food from farmed animals, non-food crops such as fibre and timber, pasture, sports fields and recreational areas. Attributes will need to be specific to irrigation and food production requirements.

While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on how council defines 'reasonable', 'efficient', and 'adequate'.

Commercial and Industrial Use Value

Council has proposed similar draft wording as the Irrigation, Cultivation, and Production of Food and Beverages value. This value relates to flow regimes and instream water quality to support abstractions and discharges, for example:

Flow regimes that provide the volume and reliability abstraction to support the activity for commercial matters such as frost fighting and crop washing, post-harvest and food processing.

The Commercial and Industrial Use value definition in the NPSFM is very clear that water quality must be considered. The comments noted by HortNZ under the Irrigation, Cultivation, and Production of Food and Beverages value are relevant here and should be considered.

This value relates to flow regimes and instream water quality to support abstractions and discharges, for example:

- Flow regimes that provide the volume and reliability abstraction to support the activity for commercial matters such as frost fighting and crop washing, post-harvest and food processing.

HortNZ has made specific comments on each FMU values in Appendix Three.

Draft Water Quality Policy Options

HortNZ has noted our responses to all the draft water quality policy options in the below table. This covers options relevant to horticulture and includes all FMUs

| Options | Comment |
|---|--|
| Achieving a large reduction in Nitrogen, Phosphorus, Sediment and E. coli from specific catchments over time. | It is not possible to support reductions without full knowledge of the actions proposed and the costs/benefits to do so. It is unclear why some catchments or estuaries have high percentage reduction targets for nitrogen and phosphorus when surface water quality levels are in A band and sometimes trending up (improving) over time such as in Kaituna. |
| Using Freshwater Farm Plans to reduce risk, set minimum standards and continual improvement | Support on the basis that Council does not take a one size fits all approach , and that minimum |

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| <p>requirements to address rural land uses and practices that pose a high risk of sediment, nitrogen, E. coli and phosphorus loss, particularly in the lower catchments.</p> | <p>standards are identified that reflect the freshwater risks posed by different farming and growing systems, and knowledge practices and tools currently available to manage those risks appropriately. Horticulture has existing industry minimum standards for environmental management (GAP good management practice).</p> |
| <p>Gathering farm data on stock, feed, fertiliser and other farm and horticulture nutrient inputs, and consider controlling these to bring down nutrient losses across the whole catchment, potentially with a cap on all nutrient inputs, and/or a sinking lid approach, stepped over time.</p> | <p>Support subject to developing a suitably robust criteria or modelling decision support tool to inform decision making</p> <p>The council must work with growers on the most appropriate data to collect, how this is shared, stored and used.</p> <p>Nutrient limits and/or a sinking lid approach must be case by case specific and based in a robust modelling or criteria to reflect nutrient allocation decisions to achieve the environmental outcomes, and for horticulture crops, reflect crop specific nutrient requirements to achieve a marketable and profitable yield.</p> |
| <p>Controlling intensive grazing that removes vegetation cover (such as strip grazing), cultivation and potentially horticulture, requiring active management of Critical Source Areas (overland flow paths), in similar way to national Intensive Winter Grazing Regulations</p> | <p>Do not support the policy option or understand the suggestion that cultivation and potentially horticulture is a vegetation cover removing activity that should be managed in a similar way to national Intensive Winter Grazing Regulations. This does not reflect the nature of the activities and different effects.</p> <p>Freshwater Farm Plans are the mechanism to reduce risk, set minimum standards and continual improvement requirements to address rural land uses and practices that pose a high risk of sediment, nitrogen, E. coli and phosphorus loss</p> |
| <p>Exploring and encouraging physical technological solutions such as treatment of drain water, treatment wetlands, and sediment control bunds in appropriate locations</p> | <p>Support catchment and sub catchment mitigation responses, that are appropriate to manage freshwater risks from different farming and growing systems and biophysical environments – not a one size fits all approach. We support catchment scale water quality solutions to achieve visions and values, supported through certified freshwater farm plans, and with appropriate government investment to support a network approach to mitigations. The policy option should identify the mechanism for collaborative responses.</p> |

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| <p>Requiring no future net increases in E. coli, nitrogen, phosphorus, or sediment as a result of future land use and practice change (this may require offsetting).</p> | <p>Do not support a no future net increases approach as any increases must be considered in an allocation framework that ensures all environmental outcomes (including climate change emission reductions), catchment visions and values, and allocation principles are achieved. An increase in an activity's contaminant discharges may not compromise achieving freshwater outcomes for an FMU</p> |
| <p>Supporting and encouraging land use change to land uses with lower contaminant losses, by providing incentives and removing barriers for land use change where we can. Indicate that land use rules will be revisited in 10 years</p> | <p>Support the policy option. Land use change will also respond to climate change and emission reduction requirements. As horticulture is a lower emissions land use option, we offer to work with Council to identify potential barriers to changing land use to horticulture, and how landowners can be supported to make the transition.</p> <p>Council should also consider set reserved areas for native vegetation near vulnerable streams and estuaries to function as natural mitigation barriers.</p> |
| <p>Continuing to reduce Phosphorus, E. coli and nitrogen from point source discharges via tighter conditions for resource consents, including requiring lined animal effluent storage and effluent irrigation rate, timing and volume requirements</p> | <p>Do not support the suggestion that resource consent conditions for point source discharges need to be tightened up. Conditions should be fair and reasonable and relate to the actual or potential effects of the proposal.</p> |
| <p>Requiring stock exclusion from estuary margins and all permanent and intermittent rivers, streams, canals (which are modified rivers!) and drains. Maintenance of a thick grass sward on margins and/or planting of one side of drains and canals to provide shade and bring down water temperature.</p> | <p>Supportive of riparian responses, those responses must not be to a default regulation (such as a 20m width). The need for, width and type of riparian treatment must be adaptive and respond to the best outcome for the freshwater body and adjoining activity.</p> |
| <p>Restricting new irrigation and managing all irrigation (particularly on pastoral land) as these tend to increase contaminant losses.</p> | <p>Do not support the policy option as a suggested default position for new and existing irrigation proposals.</p> <p>Irrigation is a necessary part of food production (a values expressed in the FMU and will increasingly be necessary as a response to climate change impacts)</p> <p>Irrigation needs, techniques and effects vary.</p> <p>It is inaccurate to suggest that all irrigation tends to increased contaminant loads.</p> <p>Although we are supportive measuring or collecting data of actual irrigation volumes applied to crop area additionally to volume pumped per water consent data.</p> |

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| Requiring consents for pumped drainage discharges (including existing discharges) and apply a best practicable option approach to reduce contaminants and restore habitat and fish passage. Consider constraining periods of time that flap gates can be closed, treatment of drain water prior to discharge, reducing the area serviced, and/or good practice drain management requirements. | Do not support as unclear if who currently manages the pumped drainage, who will apply for the consent and how the conditions would relate back to growers/farmers whose discharges contribute to the drainage. Also, if growers/farmers have a FWFP and are required to use the best practicable option should they need to get consents as well? |
| Considering using the diversion gates during high rainfall and flow events to stop sediment laden flows from entering and settling in the Maketū estuary | Support but need to understand policy more |
| Keep the nutrient levels in rivers low by encouraging good management practices, especially in lowland farms. | Support |
| Supporting Gisborne District Council to manage farming activities in their parts of the upper catchments. | It is unclear what this will look like. No information has been provided. Don't really support cross boundary/region FMU |
| Being clear about what 'good management practice' is. We may set out minimum requirements for Freshwater Farm Plans across the region and encourage continual improvement | Support on the basis that Council does not take a one size fits all approach , and that minimum standards are identified that reflect the freshwater risks posed by different farming and growing systems, and knowledge practices and tools currently available to manage those risks appropriately. |
| Encouraging restoration of in-river and in-estuary habitat, and river margin habitat, including fish passage, for all land uses | Support |

Minimum Good Land Management Practice Requirements

The horticulture sector supports growers in reducing their environmental impact through research, developing codes of practices, tools and industry assurance programmes.

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.

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. 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 NZGAP), and growers are highly motivated to achieve and maintain certification.

Farm environment plans are a good mechanism to set good management practice and the industry supports these being delivered through existing industry assurance programmes like Global GAP (export fruit and vegetables) and NZ GAP (domestic fruit and vegetables).

There are a number of resources that HorticultureNZ has been involved in that support good management practices:

- Industry Agreed Good Management Practices Relating to Water Quality⁴
- Good Farming Practice Action Plan for Water Quality⁵
- Erosion and Sediment Control Guidelines for Vegetable Production⁶

Industry assurance programme set out good management practices including:

- Completing soil management plans
- Completing water management action plans
- Water Conservation Risk Assessment (use and contamination prevention)
- Spray Plan (which is a requirement of Global Gap). The spray plan identifies sensitive areas (including waterways) and identifies how to mitigate risk
- Minimising contaminants (agrichemicals) into waterways.

HorticultureNZ supports existing GAP programmes as a benchmark for delivering good management practices on orchards.

Water Quality

WATER QUALITY TARGETS

We support the policy option to encourage land use transition to more low emissions food production.

We support a practice-based approach to managing freshwater risks on property through a certified freshwater farm plan, and decision support tools as evidence of good and best practices to minimise contaminant losses.

The horticulture industry has several active projects to help growers develop and implement robust and comprehensive freshwater farm plans that manage freshwater risks for their operations in the catchments that they grow in, using good and best management practices based on industry research and codes of practice.

HortNZ is interested to know if council has done a cost-benefit analysis of proposed water quality policy options? If so, can this please be provided to HortNZ.

⁴ <https://www.ecan.govt.nz/your-region/farmers-hub/gmp/what-are-industry-agreed-good-management-practices/>

⁵ https://www.irrigationnz.co.nz/Attachment?Action=Download&Attachment_id=467

⁶ <https://www.hortnz.co.nz/assets/Compliance/Erosion-and-Sediment-Control-Guidelines-for-vegetable-production-v1.1.pdf>

HortNZ has made specific comments on water quality targets for each FMU in Appendix Four.

WATER QUALITY SUMMARY

HortNZ has made specific comments on water quality summaries for each FMU in Appendix Four.

TIMEFRAMES

While specific timeframes have been proposed to achieve water quality targets, it is not possible to answer 'what is a reasonable timeframe to achieve water quality targets' without full knowledge of the actions proposed and the costs/benefits to do so.

HortNZ has made specific comments on the proposed timeframes for each FMU in Appendix Four.

Surface Water Quantity and Allocation

WATER STORAGE

While HortNZ supports encouraging more users to store water after heavy rainfall, storage is expensive and requires sufficient land to provide for infrastructure. Most orchards don't have available land to establish storage ponds and water schemes are expensive. Storage is an acceptable solution - sometimes.

The Kiwifruit Industry Water Strategy has provided a resource for growers with the purpose to promote water storage as a way to provide for water security⁷.

One of the less traditional water storage options is Managed Aquifer Recharge, or MAR which is a set of physical tools that enables the capture of high-quality water from rivers and streams during high winter flows and use it to purposefully recharge aquifers.

As part of Hawke's Bay Regional Council's Regional Water Security Programme⁸, they will be carrying out a three-year pilot in central Hawke's Bay to determine whether MAR is a viable option to help ensure Hawke's Bay has long-term, climate-resilient and secure supplies of freshwater.

RELIABLE WATER SUPPLY

HortNZ supports a freshwater allocation regime based on the principles of efficiency, sustainability and equity. Greater reliability for the most efficient and sustainable users of water. Equity to provide a balance between recognising the investment of existing users and providing for new opportunities.

HortNZ supports a less water but more reliability approach. Horticulture is an efficient user of water and water is required in certain volumes and times throughout the year to grow a marketable yield. Water of a certain quality is also required to prepare produce for human consumption. Permanent horticulture requires water to protect crops from frost.

⁷ https://www.nzkgi.org.nz/wp-content/uploads/2020/10/2020-10-29-FINAL-WEB-version-J002042_Zespri_Kiwiflier_Insert_Water_Storage.pdf

⁸ <https://www.hbrc.govt.nz/assets/Uploads/MAR0123-A4flyer-V07.pdf>

OVERALLOCATION

HortNZ supports the following approach in managing overallocation in overallocated catchments:

- Identify and prioritise existing authorised users over new takes
- Checking the volumes/rates allocated against those actually used and what isn't used could be clawed back
- Set dates for reductions
- Identify priority needs
- Use other methods e.g. transfers
- Switch to groundwater

Groundwater

GROUNDWATER SUMMARY

HortNZ has made specific comments on groundwater for each FMU in Appendix Five

GROUNDWATER MANAGEMENT

Groundwater should be managed so that new water takes don't adversely affect existing users e.g. dropping bore water levels and resulting in saltwater intrusion, and also ensuring that culturally important springs aren't dewatered and wetlands aren't drained.

GROUNDWATER AVAILABILITY

The approach by council is to either set groundwater allocation limits that are lower i.e. more conservative or higher eg; greater risk of over allocation. HortNZ view is that an adaptive management approach seems appropriate which would involve choosing a higher volume but monitoring well before it is reached for adverse effects and if there are any, the allocation limit would need to be lowered.

Appendix One FMU boundaries and summary

| FMU | Boundary | Summary |
|---------------|---|--|
| Waiotaha | HortNZ supports the FMU boundary | <p>There are 13 avocado and 33 kiwifruit growers in this FMU.</p> <p>It's unclear why the Waiotaha FMU is included in the Ōpōtiki District economic figures along with the Ōhiwa Harbour, East Coast and Waioeka-Ōtara Draft FMUs</p> |
| Waioeka-Otara | Unclear how the split boundary will work in a policy setting. Boundary map confusing to understand as no legend | <p>There are 140 kiwifruit growers and 23 avocado in this FMU.</p> <p>It's unclear why the Waioeka-Otara FMU is included in the Ōpōtiki District economic figures along with the Ōhiwa Harbour, East Coast and Waiotaha Draft FMUs</p> |
| East Coast | Unclear how the split boundary will work in a policy setting. Boundary map confusing to understand as no legend | <p>There are 66 kiwifruit and 17 avocado growers in this FMU.</p> <p>It's unclear why the East Coast FMU is included in the Ōpōtiki District economic figures along with the Ōhiwa Harbour, Waiōtaha and Waioeka-Ōtara Draft FMUs.</p> |
| Waihi Estuary | HortNZ supports the FMU boundary | <p>There are 302 kiwifruit and 68 avocado growers in this FMU.</p> <p>The brief description of the Waihi estuary and the important work of Wai Kokopu has been understated. The Waihi estuary is in a poor and declining ecological state and does not consistently meet guidelines for safe swimming and shellfish gathering.</p> <p>It's one of the five most degraded estuaries in the country and just 3% of the wetlands that once supported large native bird and fish populations remain. E. Coli levels in the estuary continue to rise and are around 430% higher than what is safe to eat. Nitrogen and phosphorus loads to the estuary are high.</p> <p>The work of Wai Kokopu is a nationally significant restoration project.</p> |

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| Ohiwa | On page 7 of the FMU story it says that the draft Ohiwa Harbour FMU includes the Waiotaha catchment which doesn't seem right given there is a Waiotaha FMU story. | There are 9 avocado and 6 kiwifruit orchards in this FMU HortNZ supports the FMU summary |
| Rangitaiki | HortNZ supports the FMU boundary | There are 100 kiwifruit and 6 avocado growers in this FMU HortNZ supports the summary |
| Tarawera | HortNZ supports the FMU boundary | There are 7 avocado and 40 kiwifruit growers in this FMU On page 8 it is noted that 'Substantial natural wetlands in the lowlands are Lake Popowharau, Tahuna-Putanaki, Lake Tamurenui, Tumurau Lagoon, Awakaponga Wetlands, Awakaponga Stream, Awaiti Wetlands, Bregman's Lagoon, Tarawera Cut, Matatā Lagoon, Matuku wetlands, Kawerau Road wetland, Lake Tahana, Lake Rotoitipaku, Mangaone Two, Mangaone Lake, Matatā dump and Lake Rotoroa'. Is it meant that the stated lakes are wetlands or is this an error? Apart from seeking clarification on the above statement, HortNZ supports the summary |
| Kaituna | HortNZ supports the FMU boundary | There are 166 avocado and 853 kiwifruit growers in this FMU On page 10 it is stated that sediment loss from erosion is predicted to get a lot worse - why does council think this if rainfall is not expected to change significantly? Apart from seeking clarification on the above statement, HortNZ supports the summary |
| Tauranga Moana | HortNZ supports the FMU boundary | The description of land use has separated horticulture and kiwifruit - horticulture land use 18% and kiwifruit 4% which is confusing. If kiwifruit is only 4% then what |

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| | | <p>is the other 18% of horticulture grown in the FMU.</p> <p>Apart from seeking clarification on the above statement, HortNZ supports the summary</p> |
| Whakatane | HortNZ supports the FMU boundary | There are 36 kiwifruit and 5 avocado growers in this FMU |
| Waitahanui | HortNZ supports the FMU boundary | There are 21 kiwifruit and 10 avocado growers in this FMU |

Appendix Two Visions

| FMU | Comment |
|---------------|---|
| Waiotaha | <p>HortNZ does not fully support either option.</p> <p>We do support the value of ‘innovative and sustainable land and water management practices support food production and food processing’ in option A. Option B doesn’t include a vision for food production therefore HortNZ doesn’t fully support option b.</p> <p>HortNZ notes there are no vision options to support the transition to low emissions land use.</p> |
| Waioeka-Otara | <p>HortNZ does not fully support either option.</p> <p>We do support the value of ‘innovative and sustainable land and water management practices support food production and food processing’ in option A</p> <p>Option b doesn’t include a vision for food production therefore HortNZ doesn’t fully support option b.</p> <p>Mahinga kai has not been properly provided for. It isn't referred to in Option A and Option B only refers to mahinga mataitai, so the vision doesn't appear to appropriately overarch the values around mahinga kai.</p> |
| East Coast | <p>HortNZ does not fully support either option.</p> <p>We do support the value of ‘innovative and sustainable land and water management practices support food production and food processing’ in option A and would support Option b in full if it did include a food production vision.</p> |
| Waihi Estuary | <p>HortNZ does not fully support either option.</p> <p>We do support the value of ‘innovative and sustainable land and water management practices support food production and food processing’ in option A</p> <p>Option b doesn’t include a vision for food production therefore HortNZ doesn’t fully support option b.</p> <p>We support the inclusion of aquifers in each vision</p> |
| Ohiwa | <p>HortNZ does not fully support either option.</p> <p>We do support the value of ‘innovative and sustainable land and water management practices support food production and food processing’ in option A</p> <p>Option b doesn’t include a vision for food production therefore HortNZ doesn’t fully support option b.</p> <p>B4 is not a vision – it’s an action and therefore needs to be reworded.</p> |
| Rangitaiki | <p>HortNZ does not fully support either option.</p> <p>HortNZ doesn’t fully support option b but does recognise the co-governance framework in place and the existing Regional Policy Statement inclusions in the</p> |

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| | <p>vision. If the food production vision in option a was included in option b, HortNZ would support option b.</p> <p>HortNZ notes there are no vision options to support the transition to low emissions land use and notes that option A (2) allows for more intensive land use above the Matahina Dam which contradicts the following draft policy options that council has provided:</p> <ul style="list-style-type: none"> • Enable, encourage and/or incentivise land use change to land use that will contribute less contaminants and, in the lowlands, are appropriate to future wetter conditions • Using Freshwater Farm Plans to reduce risk, require good management practice, set minimum standards, and seek continual improvement to address rural land uses and practices that pose a high risk of sediment, nitrogen, E. coli and phosphorus loss • Focus primarily on reducing nutrient concentrations and loads in the catchment above Matahina Dam, and in the lowland drainage network <p>The vision also contradicts the freshwater health issues for the FMU that state:</p> <ul style="list-style-type: none"> • Elevated nitrogen and worsening trends. Nitrate concentrations in the upper catchment are elevated, 10-year trends at the dam sites and in the lower Rangitāiki River are worsening, and potential land use intensification poses additional risks <p>Maori Kiwifruit Growers Inc notes that iwi/ Māori would not support more intensive land use if it contributed to the ongoing degradation of Te Taiao. They stressed that the land development that they envisage would not be done at the expense of the environment because they have their own obligations around that to themselves and other Māori. There would be due consideration of how they could develop the land in the right way, and they feel that growing support for regenerative farming/food production practices enhanced by growing recognition and respect for Matauranga Māori could enable increased land use, enabled by water access, with less impact on Te Taiao.</p> |
| Tarawera | <p>HortNZ does not fully support either option.</p> <p>If the food production vision in option a was included in option b, Hort would support option b.</p> |
| Kaituna | <p>HortNZ does not fully support either option</p> <p>If the food production vision in option a was included in option b, Hort would support option b.</p> |
| Tauranga Moana | <p>HortNZ does not fully support either option</p> <p>If the food production vision in option a was included in option b, Hort would support option b.</p> <p>The lead-in words to Option A state : The ecosystem health and mauri of all freshwater bodies within Tauranga Moana and Te Awanui (Tauranga Harbour) is restored. Restored to what level?</p> |

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| <p>Whakatane</p> | <p>HortNZ does not fully support either option.</p> <p>We do support the value of 'innovative and sustainable land and water management practices support food production and food processing' in option A</p> <p>Option b doesn't include a vision for food production therefore HortNZ doesn't fully support option b.</p> <p>It is noted that the Geothermal Value doesn't provide for the taking of water for irrigation and frost protection</p> <p>https://www.boprc.govt.nz/environment/geothermal/geothermal-systems/tauranga-group-5</p> |
| <p>Waitahanui</p> | <p>HortNZ does not fully support either option.</p> <p>We do support the value of 'innovative and sustainable land and water management practices support food production and food processing' in option A</p> <p>Option b doesn't include a vision for food production therefore HortNZ doesn't fully support option b.</p> |

Appendix Three Values

| FMU | Comment |
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| Waiotaha | <p>It is noted that the Commercial and Industrial Use Value has not been included in the Waiotaha FMU story.</p> <p>This value relates to flow regimes and instream water quality to support abstractions and discharges, for example:</p> <ul style="list-style-type: none"> Flow regimes that provide the volume and reliability abstraction to support the activity for commercial matters such as frost fighting and crop washing, post-harvest and food processing <p>As stated in the booklet:</p> <p><i>As of January 2022, there were just four water take consents in the Waiōtahe FMU, all from groundwater. All consents are for horticultural irrigation, with a couple of them also authorising take for <u>frost protection</u> and other minor purposes.</i></p> <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>Future land use transition will likely see some FMUs increase horticulture with activities that support horticulture (post-harvest facilities) being required. Therefore there is a need for this value to provide for future innovative change that isn't focussed on the present.</p> <p>HortNZ part supports the values and recommends including the Commercial and Industrial Use Value</p> |
| Waioeka-Otara | <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |
| East Coast | <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |
| Waihi Estuary | <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |
| Ohiwa | <p>It is noted that the Commercial and Industrial Use Value has not been included.</p> <p>This value relates to flow regimes and instream water quality to support abstractions and discharges, for example:</p> |

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| | <ul style="list-style-type: none"> Flow regimes that provide the volume and reliability abstraction to support the activity for commercial matters such as frost fighting and crop washing, post-harvest and food processing <p>As stated in the booklet:</p> <p>As of January 2022, there were only five water take consents in the Ōhiwa Harbour FMU (Four ground, one surface water). The surface water consent and one of the groundwater consents are for horticultural irrigation and <u>frost protection</u>. The other three groundwater consents are for irrigation of a golf course, a community supply and a dairy farm.</p> <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>Future land use transition will likely see some FMUs increase horticulture with activities that support horticulture (post-harvest facilities) being required. Therefore there is a need for this value to provide for future innovative change that isn't focussed on the present.</p> <p>HortNZ part supports the values and recommends including the Commercial and Industrial Use Value</p> |
| Rangitaiki | <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |
| Tarawera | <p>To align with the Human Contact value, HortNZ suggest changing the Ecosystem health value to:</p> <p><u>Maintain and where necessary</u> enhance water quality in the Tarawera River FMU to a level which safeguards the life supporting capacity of the water and meets the reasonable needs of people and communities.</p> <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |
| Kaituna | <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |
| Tauranga Moana | <p>While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate.</p> <p>HortNZ part supports the values</p> |

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| Whakatane | While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate. HortNZ part supports the values |
| Waitahanui | While council's proposed value includes water quantity, it doesn't support a value for suitable water quality for irrigation needs. HortNZ would like clarification on the definition for reasonable, efficient, and adequate. HortNZ part supports the values |

Appendix Four Water Quality

| FMU | Water Quality Summary | Water Quality Timeframe | Water Quality Targets |
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| Waioatahe | <p>In the absence of a water quality monitoring site downstream of the pumped drainage network and intensively farmed land, how can council understand the magnitude of contaminant inputs into the estuary. An understanding of this would be important in terms of identifying required actions.</p> <p>HortNZ does not support the summary</p> | <p>For option A the vision is to be achieved by 2050 and for option B it is to be achieved by 2045. Why the difference?</p> | <p>HortNZ does support the targets</p> |
| Waioeka-Otara | <p>It is stated that Dairy, dry stock, and horticulture are the main sources of nitrogen and phosphorus loads in this FMU.</p> <p>Kiwifruit orchards are all located downstream of the river monitoring site. Nitrogen at the monitoring site is degrading therefore the problem at least at that location has nothing to do with kiwifruit.</p> <p>HortNZ does not support the summary</p> | <p>The visions state a 2035 timeframe and water quality targets a 10-year timeframe. The vision relates to water quality therefore it's unclear why there are two separate timeframes</p> <p>HortNZ does not support the timeframes</p> | <p>HortNZ doesn't support the targets based on comments in the summary column</p> |
| East Coast | <p>The FMU story states: Although areas with livestock and horticulture make up only a small part of the FMU, contaminant losses from these areas are estimated to be disproportionately higher, and there are more ways we can manage them to improve river health.</p> <p>Measured nitrogen concentrations are well below levels that can have toxic effects, in the A band, but are showing worsening trends. This may be related to land use intensification in the upper catchments but could also be partly due to natural causes.</p> | <p>HortNZ does support the timeframes</p> | <p>HortNZ does support the targets</p> |

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| | <p>There are a number of concerns with these two statements. It is important to know what the source is before suggesting that contaminant losses from livestock and horticulture are estimated to be proportionately higher.</p> <p>By council's own admission, contaminant losses haven't been determined with 100% certainty.</p> <p>Kiwifruit is not a high contributor to contaminant losses.</p> <p>HortNZ does not support the summary</p> | | |
| <p>Waihi Estuary</p> | <p>The FMU story states: Within each land use, there is a wide range of practice on each property. For example, some kiwifruit growing, and other intensive horticultural activities can have high nitrogen losses and contaminant runoff.</p> <p>It's stated that kiwifruit and other intensive horticulture – this implies that there is other horticulture in the FMU apart from kiwifruit which is also intensive. There are 302 avocado orchards in this FMU which are not high intensive or contribute to high contaminant losses.</p> <p>The modelled kiwifruit leaching values for this FMU are an average of 22 kg-N/ha/yr with a range of 15-26 kg-N/ha/yr</p> <p>HortNZ doesn't support the summary as currently drafted</p> | <p>It has taken generations for the estuary to be so degraded and it will likely take generations to repair. In 20 years, there should be good progress but a 40-year timeframe is more likely especially is widescale land use change is required to achieve aspirations.</p> <p>While there are timeframes to reduce contaminant loads, there is no clear direction and timeframes on the other things that need to be done in the estuary.</p> <p>HortNZ does not support the timeframes</p> | <p>Catchment groups need to play a key role in restoration activities - actions directed by local communities are going to have more buy-in and therefore, bigger impact over time. The effectiveness of catchment groups has been recognised by MFE and MPI.</p> <p>It's important to acknowledge that rural runoff and contaminant load is part of the problem, but other actions are required in the estuary as well. It shouldn't be entirely up to the rural sector to solve this when there are likely multiple causes contributing to the problem.</p> <p>HortNZ part supports the targets</p> |

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| Ohiwa | <p>The summary is based on one site that is halfway up the catchment. Inputs further down the catchment are therefore likely unknown. Additional sites would provide better information as to cause and effect. "Very likely worsening" trends for nitrate and "likely worsening" for DRP trends don't provide much confidence and this is important given that resource users will likely be required to take action.</p> <p>HortNZ doesn't support the summary as currently drafted</p> | | |
| Rangitaiki | <p>It would be good to understand the ratings for Matahina dam given that the lake has a D rating and yet presumably all of the water that runs into it has an A rating.</p> <p>HortNZ requires more information on bands before supporting the summary</p> | <p>There is much to be done in this catchment and 10 to 20 years might not be overly ambitious. The upper catchment is particularly challenged by the need for pasture irrigation on the very leaky soils at Galatea. In addition, there may be tension between the power company and iwi who may seek to develop their land upstream of the Matahina Dam and who will require more water to do so.</p> <p>HortNZ does not support the timeframes</p> | <p>It's good to see that the report acknowledges on page 20 that there is a need to understand the processes going on in the Matahina Dam Lake. It's not clear if the section "what are we aiming for" lines up with the previous sections of the report. The previous sections appear to say that nitrate in the upper catchment is elevated, and things are getting worse, lowland tributaries are degraded, suspended fine sediment is worsening etc, but the section "what are we aiming for" suggests that the scale of change required is relatively small.</p> <p>HortNZ part supports the targets</p> |
| Tarawera | HortNZ support the summary | HortNZ support the timeframes | Page 21, 1st bullet under "Draft water quality management options" says |

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| | | | <p>that one option is that when point source discharge consents are renewed, conditions will be strengthened. This raises the question as to whether council should review the conditions earlier than that if these activities are causing the majority of the problems. Expecting other land users to reduce their contaminant loadings when they aren't the major contributors seems unfair and may not result in any measurable improvement.</p> <p>HortNZ doesn't support this part of the water quality targets</p> |
| Kaituna | <p>The FMU story states: some kiwifruit growing, and other intensive horticultural activities can have high nitrogen losses and contaminant runoff.</p> <p>Elevated nutrient and sediment levels are primarily from intensive pastoral and horticultural land uses and land drainage in the lower catchment.</p> <p>It's stated that kiwifruit and other intensive horticulture – this implies that there is other horticulture in the FMU apart from kiwifruit which is also intensive. There are 166 avocado orchards in this FMU which are not high intensive or contribute to high contaminant losses.</p> | <p>A 40-year timeframe is proposed to achieve a large reduction of Nitrogen, Phosphorus, Sediment and E. coli with proposed 10 yearly targets.</p> <p>HortNZ is unable to support the timeframe until our concerns noted in the next column are addressed.</p> | <p>The FMU story states: 70% for nitrogen load, 30%-40% for phosphorus, 40%-60% for E. coli, and up to 39% for sediment. Some river water quality attributes are good (A band), and we need to maintain these. There are some sites where baseline state is worse than a national bottom line and we must act to improve this, unless it is due to natural causes.</p> <p>The concern that HortNZ has is that there are some rivers in the A band and some sitting under bottom line however council doesn't know if this is because of natural causes.</p> <p>HortNZ has questions around the type of N</p> |

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| | <p>HortNZ does not support the summary</p> | | <p>monitoring that is being done in the estuary (is council analysing the sediment or the water?) and whether the problem would go away if attention was focussed on reducing sediment as opposed to N, making some changes to ensure that the estuary tidal flushes properly etc. HortNZ supports people having to reduce their N discharges if they are clearly over applying N, but a 70% overall reduction is huge and shouldn't be supported if it's not clearly necessary.</p> <p>HortNZ does not support the targets</p> |
| <p>Tauranga Moana</p> | <p>The FMU story states: For example, some kiwifruit and other intensive horticultural activities can have high nitrogen losses and contaminant runoff at similar levels to dairy farming.</p> <p>This a misleading sentence. On average, nitrogen losses from kiwifruit and other intensive horticultural activities do not affect water quality. The average N loss for the region is 23 kg-N/ha/yr which is significantly lower than dairy. However nitrogen losses can be high in horticulture if circumstances such as heavy rain, free draining soils, and high fertiliser inputs are present.</p> <p>There is also a statement that E.coli loads primarily come</p> | <p>HortNZ does support the timeframes</p> | <p>It would be helpful to understand council's view on sediment loss that is associated with big storms like those recently that growers have no control over.</p> <p>Page 18 para 2 talks about the need to halt any degrading trends e.g. Ammonia at some sites, but the document doesn't state which sites.</p> <p>HortNZ does support the targets</p> |

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| | <p>from rural land use including horticulture. The E.coli found in the catchment was tested by council and was found to be avian. Horticulture is not a contributor to E'coli loads in the FMU.</p> <p>HortNZ does not support the summary</p> | | |
| Whakatane | <p>The FMU story states: "Elevated suspended fine sediment measures illustrate potential erosion in the upper catchment where one site is in the D band, while all other sites are in the C band. This is not currently a problem, and mud content in the estuary is relatively low, but trends are worsening across this FMU."</p> <p>Council needs to explain how erosion in the upper catchment that appears to result in a river site being in the D band combined with worsening trends in the estuary isn't a problem. It would appear that pest control/planting in the upper catchment should be an important action that the council should be considering.</p> <p>Page 16 says that N and P levels are relatively low in the Whakatane and Tauranga Rivers and Whakatane Estuary which contradicts page 13 that said P levels are high.</p> <p>HortNZ does not support the summary</p> | <p>The visions as worded need to be achieved by 2040 but the individual targets for N, P, suspended solids and E coli don't really have any timeframes stipulated.</p> <p>Hort is unable to support the timeframe until more information is provided</p> | HortNZ does support the targets |

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| <p>Waitahanui</p> | <p>With only one monitoring site there seems to be little data upon which to rely. There is no monitoring site in Waitahanui FMU for human contact. It would be necessary to have more data to confirm the brief summary about water quality in this FMU is accurate.</p> <p>Under the heading "Freshwater health issues for this FMU" these two sentences contradict each other "People Swim in the lower Waitahanui Stream and, while there is no current recreational bathing site monitoring. Long term monitoring indicates a poor state for human contact, particularly after heavy rainfall." The lack of recreational bathing site monitoring calls into question whether there is an issue or not.</p> <p>HortNZ does not support the summary</p> | <p>HortNZ does supports the timeframes</p> | <p>The approach is good, but it needs to be informed by an appropriate monitoring programme and the monitoring programme in this FMU appears to be very light. This is probably because the water quality in this FMU looks relatively good.</p> <p>HortNZ does support the targets</p> |
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Appendix Five Groundwater

| FMU | Summary comment |
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| Waiotaha | HortNZ supports the summary |
| Waiouka-Otara | HortNZ supports the summary |
| East Coast | HortNZ supports the summary but notes given that groundwater could be difficult to find and expensive to access in this FMU, which raises concerns around where growers will access their water from if they do not have storage |
| Waihi Estuary | HortNZ supports the summary |
| Ohiwa | <p>On page 26 under the heading 'Saline Intrusion' the second sentence where it states "likely" should be "unlikely".</p> <p>The risk of saline intrusion is greatest near the coast where consideration needs to be given to possible restrictions and monitoring requirements. With the very small amounts of take in this FMU saline intrusion is likely unlikely to be an issue</p> <p>Apart from the above change, HortNZ supports the summary</p> |
| Rangitaiki | HortNZ supports the summary |
| Tarawera | HortNZ supports the summary |
| Kaituna | HortNZ supports the summary |
| Tauranga Moana | HortNZ supports the summary |
| Whakatane | HortNZ supports the summary |
| Waitahanui | HortNZ supports the summary |