

**BEFORE WAIKATO REGIONAL COUNCIL  
HEARINGS PANEL**

**UNDER** the Resource Management Act 1991 (**RMA**)

**IN THE MATTER OF** Proposed Plan Change 1 to the Waikato Regional  
Plan and Variation 1 to that Proposed Plan Change:  
Waikato and Waipa River Catchments

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**Helen Marie Marr**

**PRIMARY EVIDENCE ON BEHALF OF THE AUCKLAND/WAIKATO &  
EASTERN REGION FISH AND GAME COUNCILS (“FISH & GAME”)**

**SUBMITTER ID: 74985**

**Hearing Block 3**

Dated: 5 July 2019

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## QUALIFICATIONS AND EXPERIENCE

- 1.1 My full name is Helen Marie Marr. I have the qualifications and experience set out in the evidence I presented at Block 1 on the Plan Change 1 ('PC1') hearings, dated 15 February 2019.
- 1.2 I have read the Environment Court's Code of Conduct for Expert Witnesses, and I agree to comply with it. I confirm that the issues addressed in this brief of evidence are within my area of expertise.
- 1.3 I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed. I have specified where my opinion is based on limited or partial information and identified any assumptions I have made in forming my opinions.

## 2 SUMMARY STATEMENT

### 2.1 Policy 7 – Signaling the future

- 2.2 I am concerned that, when all the recommendations of the s42A reports across all the hearings are taken together, the recommendation is to remove nearly all references to future plan changes and future allocation options. While individually all those changes may have sound reasoning, the overall effect of these changes (if adopted) is that the plan will be all but silent on the need for future changes to the nitrogen allocation system.

2.3 This means that the plan will not send a signal to those using the plan that change is likely. People may feel 'caught out' if a future plan change fundamentally alters the allocation regime. They may argue that more time for transition is required. This will seriously impact on the ability of the council and community to meet its goal of restoration by 2096. I recommend that Policy 7 remain in the plan in some form, along with Method 3.11.4.7 and 3.11.4.8.

#### **2.4 Policy 15 – Whangamarino Wetland**

2.5 Whangamarino Wetland is an internationally important wetland complex and its values must be protected and its health restored.

2.6 Policy 15 needs to set out a clear statement of actions that must be taken to achieve those goals. This can then guide any future management plans and resource consents, and will ensure those other methods are 'pulling in the same direction' as PC1.

2.7 This direction must include consideration of the hydrological regime. Rather than being separate, hydrology, water quality in wetlands and their ecological health are inextricably linked. All of these matters should be addressed and strengthened in Policy 15.

#### **2.8 Forestry**

2.9 Sediment is a contaminant of serious concern in the Waikato and Waipā catchments. Forestry can be a source of sediment during the harvest phase if not managed appropriately. The National Environmental Standard for Production Forestry (NES-PF) puts in place a nationally consistent set of controls for forestry activities, including harvest. This includes the provision of harvest plans.

2.10 However, the provisions of the NES-PF do not require the identification and management of risks to all waterbodies, only those above a certain size. In my opinion, because of this narrow consideration of waterbodies, relying on the provisions of the NES-PF to manage forestry-generated sediment carries a high risk that the water quality objectives of PC1 and the Vision and Strategy will not be achieved.

2.11 The NES-PF allows a regional plan to be more stringent than it if this is necessary to achieve objectives written to give effect to the NPSFM.

2.12 I recommend that PC1 include a specific rule to require a harvest plan prepared under the NES-PF to identify and manage risk for all waterbodies, not just the larger ones.

2.13 Other than the provision to Council of a harvest plan when forestry harvest is a permitted activity under the NES-PF there is little ability for the council to have oversight and no

ability to impose further controls to manage harvest generated sediment. Controlling vegetation clearance in riparian areas would be an effective way for the council to review and if necessary require further management of forestry harvest that may generate sediment. I recommend a new rule is included in the plan to provide for forest harvest within 20 metres of a waterbody to be a controlled activity. This will allow the council to have oversight and if necessary manage the activity.

## **2.14 Farm Environment Plans**

2.15 Farm Environment Plans (FEP) are one of the key methods used in PC1 to assist in achieving its objectives. I have analysed the recommended changes to the FEP requirements in Schedule 1 against the objectives and policies of PC1. This analysis is in Appendix 1 of my evidence. My analysis shows that there are several key areas where the recommended Schedule 1 is inconsistent with the objectives and policies of the plan. In particular, there is no link in Schedule 1 between changes required on farm to sub-catchment and catchment scale water quality outcomes, and no requirement for those changes to be proportionate to the 2016 loss of contaminants from the property.

2.16 The recommended version of Schedule 1 is based on Good Farm Practice (GFP) based on a principles set at the national level. This approach delivers a high level of flexibility for farm practice and content of FEP, but a low level of certainty of outcomes for water quality. In my opinion a more appropriate balance between flexibility and certainty would be achieved by coupling the principles with a set of minimum standards that must be complied with. This does not negate the use of additional or new practices in the future to achieve the principles, so long as they are used alongside agreed minimums.

2.17 I have recommended changes to the recommended Schedule 1 to address these issues, which largely involves re-inserting content from the notified Schedule 1 to add minimum standards.

2.18 I also recommend changes to the review and update provisions set out in recommended Schedule 1. The current wording appears to ask reviewers to continue to review the FEP against Schedule 1. In my opinion, after the initial review to ensure the FEP is consistent with Schedule 1, the focus of subsequent reviews should be on comparing farm practice with the FEP. This should be more clearly reflected in Schedule 1.

2.19 Recommended Schedule 1 allows quite wide ranging changes to the FEP to occur outside the resource consent process and without council oversight. In my opinion the opportunity to change the FEP should be more constrained, and allow only minor changes that achieve the same environmental outcome as the original FEP. This would be more consistent with

good planning practice around the use of management plans, and I have recommended changes to reflect this in Schedule 1.

### **3 SCOPE OF EVIDENCE**

3.1 I have been asked by Auckland/Waikato & Eastern Region Fish and Game Councils (**Fish & Game**) to prepare evidence in relation to their submissions on Plan Change 1 (**PC1**) for Hearing Block 3.

3.2 This evidence addresses submissions on the following areas:

- Policy 7
- Policy 15
- Forestry
- Farm Environment Plans

### **4 EVIDENCE**

4.1 In this evidence I address the specific details of Policies 7 and 15 first. I then turn to the wider issues of the treatment of forestry and the role of Farm Environment Plans (FEP).

### **5 Policy 7**

5.1 Policy 7 sets out a clear statement about preparing for a future allocation system based on land use suitability.

5.2 Fish and Games' submission supported this policy, and further, sought that some elements of a future allocation regime be implemented in this plan change (not in the future).

5.3 The s42A report has recommended deleting this policy.

5.4 While I agree that a policy like this can't bind a future council, and will not be *determinative* when deciding the shape of any future plan review, the policy and its associated methods (3.11.4.7 and 3.11.4.8) are *informative* of the currently desired trajectory of change and will be factors that the council will at least consider when reviewing the plan in the future.

5.5 That informative approach not only informs a future council reviewing a plan, it also informs a person reading a plan. It sends a signal to those reading the plan that change to the allocation framework is expected. People can then make decisions taking that context into account.

- 5.6 It is my understanding that the PC1 framework is intended to be a interim measure. To stop decline in water quality, make interim reductions in contaminant discharges, and gather information for a more fulsome plan change in the future. Policy 7 and its signal of future allocation was a key part of the approach analysed in the section 32 report prepared by the council<sup>1</sup>. That preferred approach, that was adopted as plan change one, is one based on the nature of PC1 being the beginning of a staged approach, with Policy 7 and the methods that support it 'signalling' that there will be a future stage, where allocation may change, and further reduction be required. I am concerned that, when all the recommendations of the s42A reports across all the hearings are taken together, the recommendation is to remove nearly all references to future plan changes and future allocation options. While individually all those changes may have sound reasoning, the overall effect of these changes (if adopted) is that the plan will be all but silent on the need for future changes to the nitrogen allocation system. This will fundamentally undermine the policy approach analysed and adopted in the Section 32 report.
- 5.7 This means that the plan will not send a signal to those using the plan that change is likely. People may feel 'caught out' if a future plan change fundamentally alters the allocation regime. They may argue that more time for transition is required. This will serious impact on the ability of the council and community to meet its goal of restoration by 2096.
- 5.8 The wording and intent of the policy may be better framed as an implementation method, however the s42A report recommends removing all the implementation methods, including those addressing future allocation frameworks.
- 5.9 I recommend that either:
- a) Policy 7 remain in the plan, along with Implementation Method 3.11.4.7 and 3.11.4.8;  
or
  - b) The content of Policy 7 be incorporated into Method 3.11.4.7 and 3.11.4.8 and that these methods remain part of PC1.

## **6 Policy 15**

- 6.1 Policy 15 addresses the management of contaminants to Whangamarino Wetland.
- 6.2 Fish and Game made specific submissions on the wording of Policy 15 to make it more clear and certain and to recognise the role of the hydrological regime in protecting the

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<sup>1</sup> Section 32 Report page 133-134

wetland<sup>2</sup>. Fish and Game also made other specific and general submissions relating to the management of wetlands.

- 6.3 The issue of the importance and the health of Whangamarino Wetlands was covered extensively at Hearing Stream 1, in evidence by Mr Klee and Dr Robertson. At that hearing I recommended that to manage the internationally important values of the wetland appropriately, Whangamarino Wetland should:
- a) be recognised as an outstanding waterbody,
  - b) have its own FMU, and
  - c) have associated numeric water quality goals.
- 6.4 As set out in evidence at Hearing Stream 1, hydrology including damming and diverting is intrinsically linked to the water quality and subsequent health of wetlands. Diverted flood waters bring nutrients, including nutrient rich sediment, to the Whangamarino Wetland which directly influences its water quality and indirectly influences the health of the wetland.
- 6.5 I set out in my Hearing Stream 1 evidence the legislative and policy context for the management of wetlands. To summarise that, in my opinion, the NPSFM and the WRPS set clear and explicit direction to identify the significant values of wetlands and to provide for their protection. The Vision and Strategy directs that the health of the entire catchment must be restored. PC1 must give effect to those directions for the Waikato and Waipā catchments.
- 6.6 The current wording of Policy 15 does not give effect to that direction, in my opinion. The current wording falls short of providing for protection and restoration of Whangamarino Wetland. The notified wording does not address all of the actions required to contribute towards that restoration.
- 6.7 The s42A report appears to be based on the opinion that catchment management plans and review of the consents for the Lower Waikato Waipa Flood Control Scheme would be sufficient to manage the Whangamarino Wetland. While those are very valuable tools, those processes will be guided by the objectives and policies of PC1. In my opinion it is very important that PC1 set very clear principles that direct the future management of the wetland through management plans and consents. Without this clear guidance decisions will be made on an individual basis, and may or may not contribute to the achievement of the overall desired outcome.

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<sup>2</sup> V1PC1-261

6.8 I recommend the wording of Policy 15 is amended to read:

Protect and ~~restore the~~ ~~make progress towards restoration of~~ Whangamarino Wetland by:

- ~~aa.~~ reducing the diffuse discharge of nitrogen, phosphorus, sediment and microbial pathogens in the sub-catchments that flow into the wetland; ~~and to:~~
- a. ~~Reduce and minimise~~ Avoiding further loss of the bog ecosystem; and
- ~~ab.~~ Providing for the protection of other significant values of the wetland complex ; and
- b. Providing increasing availability of mahinga kai; and
- ~~ba.~~ Managing the hydrological regime including the impacts of the Lower Waikato Waipā Flood Control Scheme; and
- c. Supporting implementation of any catchment plan prepared in future by Waikato Regional Council that covers Whangamarino Wetland.

## 7 Forestry

7.1 PC1 proposed to add an additional condition (for permitted activities) or matter of control (for controlled activities) into the standard matters in section 5.1.5 of the operative WRP. This additional matter is provision of a harvest plan, and detail on the contents of that harvest plan, for forestry activities throughout the Waikato and Waipā catchments.

7.2 Fish and Game supported the requirement for a harvest plan for forestry in PC1 and sought in its submission that the harvest plan requirements include detail on the buffers, harvest and replanting regime for the forestry activity<sup>3</sup>.

7.3 Fish and Game also sought that PC1<sup>4</sup>:

- a) amend Rules 5.1.4.14 conditions 6 and 7 to remove the exclusion for forestry from complying with restrictions on clearing riparian vegetation in High Risk Erosion Areas<sup>5</sup>,
- b) Require that no more than 50% of any sub-catchment be harvested in a 10 year period, unless 20 metre riparian buffers are put in place adjacent to permanent streams, wetlands and lakes, and
- c) Require any area of forestry be replanted within 14 months of harvest.

7.4 Dr Daniel explained in his evidence for Hearing Stream 2<sup>6</sup> that recent work undertaken in the Waikato Region has shown that sediment and riparian management are 2 of the 4

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<sup>3</sup> PC1-11016

<sup>4</sup> PC1-11007

<sup>5</sup> This would make forestry in these areas a controlled activity rather than a permitted activity (with activities not meeting the permitted/controlled activity conditions defaulting to discretionary activity).

<sup>6</sup> Dr Daniel Primary Evidence Hearign Stream 2 paragraphs 3.1 – 3.



main factors influencing ecosystem health of wadable streams, with sediment management being the most significant factor. Dr Daniel and Dr Canning gave evidence in Hearing Stream 1 about the impact of both deposited and suspended sediment on ecosystem health, including its influence on trout populations. This is particularly an issue in the Waipā and headwater catchments.

- 7.5 Mr Klee for Fish and Game and Dr Robertson for the Director-General of Conservation both gave evidence in Hearing Stream 1 about the impact of sediment on lakes and wetlands. Wetlands and Lakes are natural sinks for nutrients and sediment. Sediment can cause direct smothering of desirable vegetation in wetlands and reduces light penetration. This sedimentation is contributing to the decline in quality of lakes and wetlands.
- 7.6 Managing deposited and suspended sediment is critical to maintaining healthy aquatic ecosystems and achieving the aims of the WRPS, the NPSFM and the Vision and Strategy.
- 7.7 Earthworks and harvest activities associated with forestry can be a source of sediment in catchments. I understand from the evidence of other experts to this hearing panel, that forestry harvest can result in significant pulses of sediment reaching waterbodies<sup>7</sup>. Dr Daniel showed two photos demonstrating the direct input of sediment from forest harvest activities on small Waikato streams<sup>8</sup>. It is therefore necessary to manage forestry carefully to achieve the objectives of the plan, and to give effect to the WRPS, the NPSFM and the Vision and Strategy.
- 7.8 Since PC1 was notified and submissions made, the National Environmental Standard for Production Forestry (NES-PF) was made operative. The NES-PF applies to a wide suite of production forestry activities and includes the discharges related to those activities. It applies to all production forest activities in a plantation forest over 1 hectare in size<sup>9</sup>.

#### **Requirement for a harvest plan**

- 7.9 The NES-PF introduces a requirement for a harvest plan for all production forestry harvest activities<sup>10</sup>. In my opinion, *in general* the harvest plan required by the NES-PF is more detailed than the one proposed in PC1. However, the harvest plan in the NES-PF *is less stringent* than the proposed requirements in PC1 in its identification of waterbodies. The NES-PF only requires identification of rivers ‘to their perennial extent’ or those greater than

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<sup>7</sup> For example Dr Stewart for the Director General of Conservation and Dr Daniel for Fish and Game.

<sup>8</sup> Dr Daniel Hearing Stream 2 Evidence Figures 1 and 2 page 6

<sup>9</sup> I do not go into further detail on its requirements, except where relevant to PC1 and Fish and Game submissions on PC1.

<sup>10</sup> Regulation 66 NES-PF.

3 metres wide and wetlands larger than 0.25 ha<sup>11,12</sup>. PC1 proposed that the harvest plan identify *all* waterbodies, streams and wetlands<sup>13</sup>.

7.10 The management of waterbodies required by the harvest plan in the NES-PF differs for waterbodies that are identified in the harvest plan, compared to those that are not. For example, downstream risks from slash or sediment must only be identified for a site with a 'perennial river' and only these identified risks (those for perennial waterbodies) must be taken into account when planning earthworks<sup>14</sup> on the site during harvest. Smaller waterbodies are not required to be identified and risks to those smaller waterbodies are not required to be identified and managed. Because of the focus on larger waterbodies, the requirements of the NES-PF also do not manage the effects of sediment in smaller waterbodies travelling downstream into larger waterbodies and eventually to the estuaries and the coastal environment. This does not take into account the inter-connected nature of freshwater systems and the need to manage catchments ki uta ki tai – from the mountains to the sea.

7.11 The provisions in PC1 take an approach that *all* rivers, lakes and wetlands (regardless of size) must be managed to restore and protect the health of the catchment. This is consistent with the Vision and Strategy goal that the river is suitable for swimming and gathering food throughout its length<sup>15</sup>. PC1 as notified did distinguish between different types of streams in the stock exclusion Schedule C, in that only permanently flowing rivers and drains were required to have stock excluded. However, Fish & Game (and other parties) have led evidence that small, intermittent and ephemeral rivers and drains are important sources of contaminants, particularly sediment, that needs to be managed. The s42A report for Hearing Stream 3 recommended that Schedule C stock exclusion requirements also apply to intermittently flowing rivers. Schedule C has always applied to all lakes and wetlands regardless of size.

7.12 Given the importance of small rivers, lakes, wetlands and streams, in my opinion it would be appropriate for forestry activities to also be required to identify and manage their impacts on small waterbodies, not just perennial waterbodies and large lakes and wetlands.

7.13 Achieving this would require PC1 to include provisions that are more stringent than the NES-PF.

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<sup>11</sup> NES-PF Schedule 3 clause 3(1)

<sup>12</sup> The NES-PF Schedule 3 clause 3 also requires identification of 'any features that are to be protected during the operation, including significant natural areas' and applies slash management practices to these features. However, it is uncertain if this would include smaller waterbodies than those required to be identified in clause 3(1).

<sup>13</sup> PC1 5.1.5 (q)(a)(iii)

<sup>14</sup> NES-PF Schedule 3 clause 4(d)

<sup>15</sup> Vision & Strategy Objective (k): "the restoration of water quality within the Waikato River so that it is safe for people to swim in and take food from over its entire length".

- 7.14 The NES-PF specifically allows for a plan to be more stringent than the NES-PF “if the rule gives effect to an objective developed to give effect to the National Policy Statement for Freshwater Management<sup>16</sup>”. The objectives of PC1 were developed to give effect to the NPSFM (amongst other higher order documents, including the Vision and Strategy). In the Waikato Regional Council Report that recommended alignment of PC1 with the NES-PF<sup>17</sup>, it was noted that there were no identified conflicts arising between the Vision and Strategy and the NES-PF, but that any conflicts identified would need to be addressed.
- 7.15 In my opinion, a rule requiring the identification of *all* waterbodies on a harvest plan, and the requirement to manage risk to those waterbodies which follows from that identification, is required to give effect to the objectives of PC1 to manage the risk of sediment entering waterbodies in the Waikato and Waipā catchments.
- 7.16 For forestry managed by the NES-PF this could be achieved by including a rule in the plan stating:
- “In the Waikato and Waipā Catchment, Plantation Forestry activities managed by the NES-PF and required to produce a forestry earthworks management plan or a harvest plan, the plan must include identification of all waterbodies (regardless of size) within the affected area and must identify risks of mobilised sediment on all sites (not only those with a perennial river).”
- 7.17 In my opinion, this addition achieves the intent of the notified provisions of PC1 (supported in Fish and Game’s submission) to require a harvest plan for all forestry and for that harvest plan to identify and manage risk for all waterbodies, within the constraints imposed by the subsequent NES-PF regime and change to the WRP to remove from its control most forestry activities.

### **Management of forestry in riparian margins**

- 7.18 Fish and Game sought more stringent management of forestry in riparian areas than that provided for by the operative plan rules, specifically by removing exclusions for forestry from rules managing vegetation clearance in riparian margins and by inserting new controls on forestry at a catchment scale or within 20 metres of a waterbody.
- 7.19 Careful management of forestry in riparian areas is important because of the potential for harvesting and vegetation clearance activities associated with harvesting to directly and indirectly increase sediment entering waterbodies. Clearance of vegetation in riparian

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<sup>16</sup> NES-PF Regulation 6(1)(a)

<sup>17</sup> Waikato Regional Council Report to the Strategy and Policy Committee 17 May 2018 at [30]. Refer also at [8]: “It is understood that where conflict arises between the NESPF and the Te Ture Whaimana o Te Awa o Waikato Vision and Strategy for the Waikato River, the Vision and Strategy prevails.”

areas can directly increase the potential for erosion, by disturbing the ground and leaving the banks of the river more susceptible to erosion. Clearance of vegetation in riparian areas can also remove a buffer between harvest elsewhere in the forest and the receiving waterbody. Keeping non-production forest riparian vegetation intact is an important method to mitigate the effects of sediment generated elsewhere in the forest.

7.20 The NES-PF contains some conditions on vegetation clearance (harvest) in riparian areas<sup>18</sup>, but essentially vegetation clearance for harvest in a riparian area remains a permitted activity (no consent is required). Council has little oversight and no ability to impose restrictions beyond receiving a harvest plan for forestry managed as a permitted activity under the NES-PF.

7.21 Fish and Game submitted on Rule 5.1.4.14 of the WRP in relation to riparian areas,. That WRP rule provides that certain vegetation clearance activities in High Risk Erosion Areas would need to be considered as a controlled activity. Fish and Game's submission sought removing the exclusions for 'planted production forest' from the rule so that such activities would require consent in riparian areas. When the NES-PF came into force, Waikato Regional Council amended its plan to exclude plantation forestry activities from the vegetation clearance and earthworks rules and so Fish and Game's requested relief on this rule would have no effect (the riparian setbacks in that rule no longer apply to harvest of forestry as was the case when the submission was made). However, Fish and Game also submitted on including new restrictions relating to total area of a catchment harvested at any one time, unless setbacks of 20 metres were imposed. In summary, Fish and Game's submissions sought more restrictive riparian setbacks for forestry harvesting activities.

7.22 In order for more stringent riparian setbacks to apply to harvest of plantation forest, a new rule would need to be inserted into the plan. As stated earlier, the NES-PF provides for more stringent rules to be included in the plan; enabling the addition of a rule which is required to give effect to objectives developed to give effect to the NPSFM.

7.23 In order to achieve more control and consideration of harvest in riparian margins in the Waikato and Waipā catchments, I recommend a new rule is included in the plan stating:

*"In the Waikato and Waipā Catchments, the following activities associated with the harvest of plantation forest, occurring in any continuous 12 month period:*

- 1. Vegetation clearance which is within 20 metres on either side, of the banks of a permanently or intermittently flowing river water body of greater than 50 metres in length per kilometre of that water body,*

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<sup>18</sup> Regulation 68 and the requirement for a harvest plan.

2. *Vegetation clearance which is within 20 metres of a lake or wetland.*

*and any associated deposition of slash into or onto the beds of rivers and any subsequent discharge of contaminants into water or air are **controlled activities** (requiring resource consent) subject to the standards and terms as specified in Section 5.1.5.”*

7.24 Insertion of a new rule will allow the council to have some control over forest harvest in riparian areas. Council can then assess the impacts a particular forestry activity will have and if necessary impose conditions that limit the scale or timing of vegetation clearance in riparian areas. This type of oversight is not possible if we rely on the NES-PF alone and it runs a risk that the objectives of PC1 will not be achieved and that the outcomes will be inconsistent with the Vision and Strategy.

## 8 Farm Environment Plans

8.1 PC1 essentially contains three controls for farming;

- a) compliance with an NRP or reduction to 75<sup>th</sup> percentile of NRP<sup>19</sup>;
- b) restrictions on stock access to waterbodies; and
- c) requirements for an FEP for all but low intensity farming.

8.2 The FEP framework as notified also included minimum standards for setbacks, slope thresholds for cultivation and consideration of mitigation for stock access.

8.3 Fish and Game supported the use of FEPs as part of the rules, but sought changes to how they were referred to or changed to ensure that they were part of the resource consent process and condition review process, not outside or separate to it<sup>20</sup>. Fish and Game also supported submissions by the Director General of Conservation on various aspects of Schedule 1.<sup>21</sup>

8.4 The s42A report for Hearing Stream 3 recommends significant changes to the FEP requirements in Schedule 1, replacing it with a framework based on the national level Good Farming Practice Principles in the “Good Farming Practice Action Plan for Water Quality 2018”.

8.5 Policies 1 and 2 of PC1 set out a clear framework linking changes on farm to sub-catchment and catchment scale water quality outcomes. These outcomes are set in

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<sup>19</sup> Recommended changes in the Hearing Stream 2 s42A report remove the control on the NRP from the rules. Recommended changes to the FEP framework recommended in the Hearing Stream 3 s42A report rely on an objective and principle in the FEP framework to apply the NRP control.

<sup>20</sup> PC1-12692

<sup>21</sup> See for example FSPC1-442, FSPC1-443, FSPC1-444.

Objective 1 and Objective 3 which set short and long term numeric goals for water quality improvement. Objective 3 in particular requires that actions implemented by 2026 result in 10% of the change that is required by 2096. These objectives are not vague or unclear about what is required in relation to numeric water quality goals and actions to achieve them. They are clear, specific and time bound.

- 8.6 In order to achieve these clear, specific goals within the timeframes required, clear specific changes should be required of individuals. Those individual changes must 'add up' to the required change in the catchments. The only way that individuals can be assured that the changes they implement are appropriate and commensurate with changes required by others is for there to be a clear link to the overall catchment or sub-catchment outcomes.
- 8.7 Policy 1 and Policy 2 as amended by the s42A report for Hearing Stream 2 go some way to achieving this type of framework. I supported those changes and suggested my own amendments to strengthen that framework in my evidence for Hearing Stream 2.
- 8.8 FEPs are part of a method to achieve those catchment and sub-catchment goals. FEPs need to be structured in such a way that they will, collectively and over time, achieve the objectives of the plan. This is a requirement of the RMA.
- 8.9 I have analysed the requirements of the objectives and policies of the plan in relation to the regulation of farming generally and the use of FEPs as a tool specifically. I have then reviewed the latest Schedule 1 FEP requirements to assess whether or not they achieve the requirements of the objectives and policies. That analysis is presented in full in the table in Appendix 1 to my evidence.
- 8.10 In summary, the objectives and policies of the plan require:
- a) Collectively, FEPs must contribute towards achieving long term water quality goals, which in most cases is a reduction in contaminant discharges.
  - b) Collectively, FEPs must contribute towards achieving short term goals – approximately 10% of the change required to achieve long term goals.
  - c) Actions to achieve the short term goals must be in place by 2026.
  - d) Farms must operate at good farming practice or better to achieve a reduction in contaminant discharges.
  - e) FEPs need to define reductions in contaminant loss proportionate to sub-catchment goals and current farm loss. Therefore, they must identify:
    - i. the relevant sub-catchment,
    - ii. the sub-catchment contaminant reduction goal,
    - iii. the cumulative contaminant discharge reductions required to reach the goal,
    - iv. the current risk of contaminant losses, and

- v. defined management or mitigation actions that will reduce loss of contaminants.
- f) FEPs must define actions, which must be set out clearly, and must set timeframes for achieving actions.
- g) FEPs must establish the NRP for the farm and the FEP must:
  - i. require those above 75<sup>th</sup> percentile to reduce to below 75<sup>th</sup> percentile,
  - ii. require those between 75<sup>th</sup> percentile and 50<sup>th</sup> percentile to demonstrate real and enduring reductions in nitrogen leaching.
- h) Stock exclusion must be achieved in accordance with Schedule C.
- i) If the FEP sets out areas where stock exclusion is not feasible or practical, the FEP must set out mitigation measures.
- j) FEPs can be updated to allow improvement and new mitigation practices that will further reduce contaminant loss over time.

8.11 My analysis of the recommended FEP requirements and process is that:

- a) They do not mention long term water quality goals for the catchment or contain any requirement to identify what those goals are.
- b) They do not mention short term water quality goals for the catchment or contain any requirement to identify what those goals are.
- c) There is a requirement that an FEP must set out 'time bound actions or practices'. However, there is no requirement that actions are achieved by a particular time, or that the actions be linked to the 2026 goal for actions to be implemented.
- d) The goal of the FEP is to achieve GFP and to 'minimise the loss of contaminants'. There is no clear requirement to reduce loss of contaminants below current levels (except in relation to the NRP).
- e) There is no requirement to define:
  - i. the sub-catchment the farm is within,
  - ii. the water quality goals for the sub-catchment,
  - iii. current risk of contaminants losses (except for nitrogen),
- f) There is no link to or mention of proportionality of reductions or achievement of collective goals.
- g) There is no requirement or guidelines about how farming actions or practices should be described, for example a requirement that they are clear and specific.
- h) There is a requirement that an FEP must identify critical source areas and hotspots for contaminant loss (2(f)) and risks that the farm system poses to water quality (3a(1)).
- i) For nitrogen losses, there is a requirement that an FEP requires farms to be managed in a manner which reduces those above the 75<sup>th</sup> percentile NRP to below the 75<sup>th</sup> percentile NRP and for those below 75<sup>th</sup> percentile NRP to not exceed their NRP.

- j) There is a requirement for farms below 75<sup>th</sup> percentile to not increase nitrogen losses. There is no mention of requirement for reductions in nitrogen discharges for those farms between the 50<sup>th</sup> and 75<sup>th</sup> percentile.
- k) There is no performance condition for stock access, eg no requirement to manage stock access so that significant pugging and damage does not occur. FEPs must mitigate impacts on waterways where stock exclusion is 'not possible'. (It is not clear what the overlap or contradiction between the 'not possible' and clear requirements of Schedule C are.)
- l) FEP can be updated to allow for any type of amendment, whether or not that amendment reduces contaminant loss, so long as it is still consistent with Part B (objectives and principles). This could allow for changes in farm system or contaminant reductions being eroded, without any capacity for review by the Council.

8.12 In my opinion, based on my analysis of the recommended provisions, there is a significant disconnect between the objectives of the plan, and the FEP as an implementation method to achieve those objectives.

8.13 The FEP framework as recommended seems to be based on the assumption that asking farmers to implement GFP is enough, without properly defining what GFP actually are, or linking those actions to the community's desired water quality outcome.

8.14 I have a particular concern about the lack of, or removal of, any minimum standards from the FEP framework. In my evidence for Hearing Stream 2 I discussed the requirement for setbacks from waterbodies for cultivation, and noted that compulsory minimums should be provided for in the FEP requirements. A lack of compulsory minimums for cultivation will lead to decisions about setbacks being made on a case by case basis. This may lead to inadequate setbacks and inconsistencies in the setbacks applied between different properties, even if they have similar land use and land type.

8.15 I have recommended changes to the Schedule 1 FEP requirements to address some of these issues. These are shown in Appendix 2. My recommendations on the content of Schedule 1 are limited to those matters already in evidence, and their application in the planning framework, rather than my own interpretation or new requirements. For example, I have recommended retaining the notified wording of Schedule 1 where I consider that more specificity is appropriate. I have also incorporated recommendations on appropriate setbacks and management of critical source areas from Dr Eivers' Hearing Stream 2 evidence. Other farm systems experts may have different or additional items that need to be considered, and it may be appropriate to also incorporate those matters into Schedule 1.



8.16 I acknowledge that the authors of the s42A report (and the amended Schedule 1 in particular) are of the opinion that flexibility is preferable to prescription when setting FEP content. In my opinion, in the situation of the Waikato and Waipā catchments, where urgent and meaningful reduction in contaminant losses are required, it is more appropriate to err on the side of prescription and set clear directive requirements for considerations of contaminant loss and minimum performance standards for activities that generate those contaminants. These 'minimum standards' do not need to replace the higher level 'principles and objectives' of GFP, but can work alongside them. Where better techniques or criteria are developed to achieve a 'principle or objective' of Schedule 1, then those better techniques can be used alongside the specific requirements of the 'minimum standards'. This is a more appropriate balance between flexibility and prescription for the Waikato and Waipā catchments, in my opinion.

### **Specific changes recommended to Schedule 1**

8.17 A particular change that I recommend is to define the word 'minimise' that is used throughout the FEP objectives and principles. It is the main 'constraint' applied to loss of contaminants in Schedule 1. For example: Objective 4 "To minimise losses of sediment, microbial pathogens, phosphorus and nitrogen to waterways" and Objective 6 "To minimise contaminant losses to waterways from soil disturbance and erosion."

8.18 The dictionary definition of 'minimise' includes to "reduce something, especially something undesirable to the smallest possible amount or degree" or "represent or estimate at less than the true value or importance"<sup>22</sup>. So depending on the definition of minimise adopted by someone preparing an FEP, this could mean to make discharges as small as possible, or to make the discharges *seem* as small as possible.

8.19 Presumably it is the first definition that is intended. If so this should be clarified in Schedule 1. Reducing contaminant discharge to the 'smallest amount possible' would appear to go beyond mere 'good' farming practices – it would require at least 'best' farming practices and potentially cutting-edge technologies. While this would certainly have a desirable impact on improving water quality, it may not be intended by PC1. Ultimately, this raises the question: to what degree should the discharge be minimised? Policy 1 (as recommended in the Hearing Stream 2 s42A report) guides us in this; the reduction should be "proportionate to the amount of (2016) discharge and the water quality improvements required in the sub-catchment". In my opinion this guidance should be built into Schedule 1.

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<sup>22</sup> <https://www.lexico.com/en/definition/minimize>

- 8.20 Another particular set of changes I have recommended is to more clearly link the farm and the farm management practices with the surrounding environment and environmental outcome. The recommended version of Schedule 1 does not require the FEP to identify the catchment or sub-catchment the farm is located within. There is also no requirement to identify the water quality goals of the sub-catchment and how the farm management practices can contribute to achievement of that goal. My analysis of the policy provisions directing FEPs (contained in Appendix 1) is that the contribution of the farm to achieving sub-catchment water quality goals, and the proportionality of on farm contaminant reductions to on farm contaminant losses and sub-catchment improvement is a key policy requirement. In order for this to be assessed, the sub-catchment and the sub-catchment water quality goals need to be identified and assessed in the farm plan. The changes I recommend to Schedule 1 include these requirements.
- 8.21 I recommend deleting reference to 'maximise nutrient use efficiency' in Objective 2 of the FEP requirements. 'Nutrient use efficiency' is a term not used in PC1. It is not defined in PC1 or Schedule 1. I understand nutrient use efficiency to mean the ratio between nitrogen bought onto the farm compared with the nitrogen exported as product. Improving nutrient use efficiency is a goal of the Sustainable Dairying: Water Accord. While improving nutrient efficiency may be a good goal for the dairy industry, it is the amount of contaminant lost from the farm that is of concern to the council, not how much product was produced compared to how much was lost. I recommend this phrase is deleted from Scheduled 1.
- 8.22 I also recommend changes to the review provisions of the FEP Schedule 1. As recommended, these read as if it is the FEP that is to be reviewed to make sure it is consistent with Schedule 1. That is appropriate for the first review. However, for subsequent reviews, in my opinion, that type of approach will not enable to the council the visibility on farm management actions that is required. In my view it is the farm practice that should be reviewed to ensure it is consistent with the FEP at the 12 month and subsequent reviews.
- 8.23 Changes to the ability to alter the FEP are also required in my opinion and I have recommended these in Schedule 1. The provisions for changing the FEP recommended in the s42A report were so broad as to enable a fundamental change to the farming operation, including increases in contaminant loss or increased intensity, that would be inconsistent with the PC1 framework and are more properly dealt with through the resource consent process where the council has proper oversight of the outcomes.

### **Summary on FEP**

- 8.24 In my evidence for Hearing Stream 2 I identified four key elements necessary for a successful management plan approach. These are :
- i. the resource consent needs to clearly state the environmental outcome sought;
  - ii. the FEP needs to be prepared appropriately;
  - iii. the management actions set out in the FEP must achieve the outcome required by the resource consent decisions; and
  - iv. those management actions must be set out in a clear and unambiguous way, that it is possible to assess compliance against.
- 8.25 Items (ii) and (iv) can be addressed to some extent by the content of Schedule 1, however changes to the overall plan framework are also required, in my opinion (including setting clear sub-catchment goals in the Plan and assessing consents collectively against those goals) and these changes are set out in my Hearing Stream 2 evidence.
- 8.26 Items (i) and (iii) can only be achieved by a robust resource consent process. Fish and Game's legal counsel will be making legal submissions on the compliance regime for FEP proposed in the s42A report. In my opinion, in order to achieve the environmental outcomes sought by the plan, any assessment of compliance would need to be against specific 'on the ground' management actions, for example if fences are in place and if specific grazing management practices are used. In this situation there will need to be a robust compliance procedure for assessing on farm actions with clear minimum standards.
- 8.27 The changes I have recommended to the FEP framework will ensure more robust procedures are in place to review farm practice and the content of FEPs. This will require substantial resourcing from both the council and the farming sector to implement. However, this cost is necessary to achieve the environmental improvement objectives of the plan and to avoid inconsistent practice and inappropriate changes to the FEP occurring without council oversight, which undermines the regime.
- 8.28 In my Hearing Stream 2 evidence I raised concerns about the uneven application of GFPs and a likely failure to achieve short term goals for the waterbodies because of it. There is currently relatively little oversight or ability for the Council to have influence over the content of a FEP, particularly in relation to collective achievement of sub-catchment wide goals. I still hold those concerns, even with the changes to Schedule 1 that I have recommended in this evidence.

**Helen Marr**  
**5 July 2019**

## Appendix 1 Requirements for FEP in PC 1 Objectives and Policies

Provision	Notified provision	S42A recommendation	Sought by Fish and Game	Summary of requirement for FEP	Analysis of recommended FEP provisions in s42A
Objective 1	By 2096, discharges of nitrogen, phosphorus, sediment and microbial pathogens to land and water result in achievement of the restoration and protection of the 80-year water quality attribute^ targets^ in Table 3.11-1.	By 2096 at the latest, a reduction in the discharges of nitrogen, phosphorus, sediment and microbial pathogens to land and water results in achievement of the restoration and protection of the Waikato and Waipā Rivers, such that of the 80-year water quality attribute targets states in Table 3.11-1 are met.	Include reference to achieving values	Collectively, FEP need to contribute towards achieving long term water quality goals.	No mention of long term water quality goals or any requirement to identify what they are in the FEP.
Objective 3	Actions put in place and implemented by 2026 to reduce discharges of nitrogen, phosphorus, sediment and microbial pathogens, are sufficient to achieve ten percent of the required change between current water quality and the 80-year water quality attribute^ targets^ in Table 3.11-1. A ten percent change towards the long term water quality improvements is indicated by the short term water quality attribute^ targets^ in Table 3.11-1.	Actions put in place and implemented by 2026 to reduce diffuse and point source discharges of nitrogen, phosphorus, sediment and microbial pathogens, are sufficient to achieve the short-term water quality attribute states in Table 3.11-1. ten percent of the required change between current water quality and the 80-year water quality attribute targets in Table 3.11-1. A ten percent change towards the long term water quality improvements is indicated by the short term water quality attribute targets in Table 3.11-1.		Collectively, FEP need to contribute towards achieving short term goals – approximately 10% of change required to achieve long term goals.	No mention of short term water quality goals or any requirement to identify what they are in the FEP.  Where time bound actions are required there is no requirement to achieve these by a particular time, or that the achievement be linked to the 2026 goal for actions to be implemented.

Provision	Notified provision	S42A recommendation	Sought by Fish and Game	Summary of requirement for FEP	Analysis of recommended FEP provisions in s42A
Policy 1	Manage and require reductions in <b>sub-catchment-wide</b> discharges of nitrogen, phosphorus, sediment and <b>microbial pathogens</b> , by:  a. ...	<del>Reduce</del> <del>Manage and require</del> <del>reductions in</del> <u>catchment-wide</u> <del>and</del> <del>sub-catchment-wide</del> <u>diffuse</u> discharges of nitrogen, phosphorus, sediment and microbial pathogens, by: a1. <u>Requiring all farming activities to operate at Good Farming Practice, or better; and</u>		FEPs need to have a goal to reduce contaminant loss.  Farms must operate at good farming practice or better to achieve reduction in contaminant discharges.	Goal of FEP is to achieve GFP and to 'minimise the loss of contaminants'. No requirement to reduce loss of contaminants below current levels (except in relation to NRP below).
	b. Requiring <b>farming activities</b> with moderate to high levels of contaminant discharge to water bodies to reduce their discharges; and	b. Requiring farming activities with moderate to high levels of contaminant discharge to water bodies to reduce their discharges <u>proportionate to the amount of (2016) discharge and the water quality improvements required in the sub-catchment</u>	b. Requiring, <u>through the resource consent process, farming activities</u> with moderate to high levels of contaminant discharge to water bodies to reduce their discharges <u>proportionate to the amount of the 2016 discharge (those discharging more are expected to make greater reductions) and proportionate to the water quality improvements required in the sub-catchment;</u>	FEPs needs to define reductions in contaminant loss proportionate to sub-catchment goal and current loss. Therefore must identify sub-catchment goal, cumulative reductions required to reach goal, current farm losses, contaminant loss reduction goals for farm.	No requirement to define sub-catchment the farm is within. No requirement to define the water quality goals for the sub-catchment. No requirement to identify current losses of contaminants except for nitrogen. No mention of proportionality or achievement of collective goals.
	c. Progressively excluding cattle, horses, deer and pigs from rivers, streams, <b>drains</b> , wetlands and lakes.				
Policy 2	Manage and require reductions in <b>sub-catchment-wide diffuse discharges</b> of nitrogen, phosphorus, sediment and <b>microbial pathogens</b> from <b>farming</b>	<del>Reduce</del> <del>Manage and require</del> <del>reductions in</del> <u>catchment-wide</u> <del>and</del> <del>sub-catchment-wide</del> diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens from farming activities on properties		FEPs need to link to sub-catchment goals  FEPs need to define reductions proportionate	No requirement for FEPs to define sub-catchment the farm is within. No for FEPs requirement to define the water quality goals for the sub-catchment.

Provision	Notified provision	S42A recommendation	Sought by Fish and Game	Summary of requirement for FEP	Analysis of recommended FEP provisions in s42A
	activities on properties and enterprises by:	and enterprises, through Farm Environment Plans that:		to sub-catchment goal and current loss.	No for FEPs requirement to identify quantum of current losses of contaminants except for nitrogen. No mention of proportionality or achievement of collective goals.
		<u>a1. Set out clear, specific and timeframed minimum standards for Good Farming Practice; and</u>	<u>a1. Set out clear, specific and timeframed minimum standards for actions that reduce discharges of contaminants, including the use of Good or Best Farming Practice where this is appropriate; and</u>	FEP must define actions, must be set out clearly, must set timeframes for achieving actions.	FEPs must set out 'time bound actions or practices'. No requirement or guidelines for FEPs about how farming practices should be described for example a requirement that they are clear and specific.
	a. Taking a tailored, risk based approach to define mitigation actions on the land that will reduce <b>diffuse discharges</b> of nitrogen, phosphorus, sediment and <b>microbial pathogens</b> , with the mitigation actions to be specified in a <b>Farm Environment Plan</b> either associated with a resource consent, or in specific requirements established by participation in a <b>Certified Industry Scheme</b> ; and  b. ...	<u>a. Take <del>Taking</del> a tailored, risk based approach to define mitigation actions on the land that will reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens;</u>	<u>a. Take <del>Taking</del> a tailored, risk based approach to define <u>mitigation management</u> actions on the land that will reduce <u>or mitigate</u> diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens;</u>	FEP must define risk of contaminant loss.  FEP must set out defined management or mitigation actions that will <u>reduce</u> loss of contaminants.	There is a requirement that FEP must identify critical source areas and hotspots for contaminant loss (2(f)) and risks that the farm system poses to water quality (3a(1)).  No requirement for FEPs to result in reduction in loss of contaminants. Goal is GFP and 'minimise'.

Provision	Notified provision	S42A recommendation	Sought by Fish and Game	Summary of requirement for FEP	Analysis of recommended FEP provisions in s42A
	c. Establishing a <b>Nitrogen Reference Point</b> for the <b>property</b> or <b>enterprise</b> ; and	<p><u>a2. Establishing, where possible, a Nitrogen Reference Point for all properties or enterprises; and</u></p> <p><u>b1. Calculating the 75<sup>th</sup> percentile and 50<sup>th</sup> percentile nitrogen leaching values and requiring farmers with a Nitrogen Reference Point greater than the 75<sup>th</sup> percentile to reduce nitrogen loss to below the 75<sup>th</sup> percentile and farmers with a Nitrogen Reference Point between the 50<sup>th</sup> and 75<sup>th</sup> percentile to demonstrate real and enduring reductions of nitrogen leaching, with resource consents specifying an amount of reduction or changes to practices required to take place; and</u></p>		<p>Establish NRP</p> <p>Require those above 75<sup>th</sup> percentile to reduce to below 75<sup>th</sup> percentile.</p> <p>Require those between 75<sup>th</sup> percentile and 50<sup>th</sup> percentile to demonstrate real and enduring reductions in nitrogen leaching.</p>	<p>FEP requires farms to be managed in a manner which reduces 75<sup>th</sup> percentile to below 75<sup>th</sup> percentile and for those below 75<sup>th</sup> percentile to not exceed NRP (Objective 3).</p> <p>No requirement for reductions for farms below 75<sup>th</sup> percentile.</p> <p>No mention of 50<sup>th</sup> percentile.</p>
	d. Requiring the degree of reduction in <b>diffuse discharges</b> of nitrogen, phosphorus, sediment and <b>microbial pathogens</b> to be proportionate to the amount of current discharge (those discharging more are expected to make greater reductions), and proportionate to the scale of water quality	b. Requiring farming activities with moderate to high levels of contaminant discharge to water bodies to reduce their discharges <u>proportionate to the amount of (2016) discharge and the water quality improvements required in the sub-catchment</u> ; and		FEP needs to define reductions proportionate to sub-catchment goal and current loss.	<p>No requirement for FEPs to define sub-catchment the farm is within.</p> <p>No requirement for FEPs to define the water quality goals for the sub-catchment.</p> <p>No requirement for FEPs to identify quantum of current losses of contaminants except for nitrogen.</p> <p>No mention of proportionality or</p>

Provision	Notified provision	S42A recommendation	Sought by Fish and Game	Summary of requirement for FEP	Analysis of recommended FEP provisions in s42A
	improvement required in the <b>sub-catchment</b> ; and				achievement of collective goals.
	e. Requiring stock exclusion to be completed within 3 years following the dates by which a <b>Farm Environment Plan</b> must be provided to the Council, or in any case no later than 1 July 2026.		<p><u>a2. Where stock exclusion from waterbodies is not carried out in accordance with Schedule C, the actions that will be undertaken on the land to minimise stock access to water (for example, low stocking rates adjacent to waterbodies, provision of alternative water supply and shade) and to mitigate the effect of stock access to water where it occurs (for example, riparian planting in other places).</u></p> <p>e. Requiring stock exclusion <u>or mitigation measures where stock exclusion is not achieved</u>, to be completed within 3 years following the dates by which a <b>Farm Environment Plan</b> must be provided to the Council, or in any case no later than 1 July 2026.</p> <p>Sought performance conditions for where stock were not excluded, ie no pugging or erosion.</p>	<p>Stock exclusion must be achieved in accordance with Schedule C.</p> <p>If FEP sets out areas where stock exclusion occurs or is not practical or is not feasible or practical, FEP must set out mitigation measures.</p>	<p>FEPs must mitigate impacts on waterways where stock exclusion is 'not possible'. Stock exclusion in accordance with Schedule C is required. It is not clear what the overlap or contradiction between the 'not possible' and clear requirements of Schedule C are.</p> <p>No performance condition for stock access, eg no requirement to manage stock access so that significant pugging and damage does not occur.</p>
		<u>b2. Are flexible and able to be updated so that continuous improvement, new technologies and</u>		FEP can be updated to allow improvement and new mitigation practices that will further reduce	FEPs can be updated to allow for any type of amendment, whether or not that further reduces



Provision	Notified provision	S42A recommendation	Sought by Fish and Game	Summary of requirement for FEP	Analysis of recommended FEP provisions in s42A
		<u>mitigation practices can be adopted, such that diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens further reduce over time.</u>		contaminant loss over time.	contaminant loss, so long as it is still consistent with Part B (objectives and principles).

## Appendix 2 Track Change Plan Provisions – Schedule 1

Wording from s42A report shown in black text.

Changes recommended in Evidence of Helen Marr shown in black underline and ~~strike through~~

### **Schedule 1 - Requirements for Farm Environment Plans/Te pitihanga 1: Ngā Herenga i ngā Mahere Taiao ā-Pāmu**

The Farm Environment Plan (FEP) will be prepared in accordance with Parts A, and B below, reviewed in accordance with Part C, and changed in accordance with Part D.

#### **PART A – PROVISION OF FEP**

An FEP must be submitted to Waikato Regional Council (the council) using either:

1. A council digital FEP tool including the matters set out in Part B below to the extent relevant; OR

2. An industry prepared FEP that:

a) includes the following minimum components:

i. the matters set out in Parts B below to the extent relevant; and

ii. performance measures that are capable of being reviewed as set out in Part C below

b) has been approved by the Chief Executive of Waikato Regional Council as meeting the criteria in (a) and capable of providing FEPs in a digital format, consistent with the council data exchange specifications.

*The Waikato Regional Council data exchange specifications will set out the standards and detail of the data exchange process to be used by external industry parties in the provision of FEPs.*

#### **PART B – FEP CONTENT**

The Farm Environment Plan shall identify all potential sources of sediment, nitrogen, phosphorus and microbial pathogens, and identify farm management actions, and timeframes for those actions to be completed, in order to reduce the diffuse discharges of these contaminants.

The Farm Environment Plan must clearly identify how specified minimum standards are or will be complied with.

Descriptions of farm practices must be clearly linked to the risk of sediment, nitrogen, phosphorus and microbial pathogens that they are targeted at minimising.

Descriptions of farm practices must be written in clear and certain language, so that current and future landowners, farm managers and the council have no doubt about the actions or restrictions that are required by the Farm Environment Plan and the obligations of the landowner.

Language such as 'where appropriate' or 'when practicable' or 'as far as possible' and similar uncertain phrases must not be used, and instead the circumstances when an action or restrictions will and will not be followed must be set out clearly.

In this Schedule 'minimise' means: reducing the relevant losses of contaminants to the greatest extent necessary to achieve proportionate reductions and contribute to the achievement of the water quality goals of the sub-catchment as set out in the assessment required by 2A, 2B and 2C below.

The FEP shall contain as a minimum:

1. The property or enterprise details:

- a) Full name, address and contact details (including email addresses and telephone numbers) of the person responsible for the land use activities;
- b) Legal description of the land which constitutes the property or enterprise:
  - (i) The physical address and ownership of each parcel of land (if different from the person responsible for the property or enterprise) and any relevant farm identifiers such as the dairy supply number, Agribase identification number, valuation reference; and
  - (ii) The legal description of each parcel of land and any relevant farm identifiers such as dairy supply number.

2. A map(s) at a scale that clearly shows:

- a) The boundaries of the property or land areas being farmed;
- aa) The sub-catchment that the property or land areas being farmed are within and their location within that sub-catchment;
- b) The boundaries of the main land management units or land uses on the property or within the farm enterprise;
- c) The location (and for named water bodies, the names) of any waterbodies on the property including wetlands, lakes, streams and rivers, and identify specifically any waterbodies that meet the criteria for stock exclusion in Schedule C waterbodies;
- d) The location of riparian vegetation and fences (or other stock proof barriers) adjacent to water bodies;
- e) The location on any waterways where stock have access or there are stock crossings and stock crossing structures;
- f) The location of any critical source areas and hotspots for contaminant loss to groundwater or surface water identified in the assessment of objectives and principles and minimum standards listed in section 3; and
- g) The location(s) of any required actions to support the achievement of the objectives and principles listed in section 3.

2A. A description of the water quality state and goals of the sub-catchment (as set out in Table 3.11-1) that the property or land areas being farmed are within and an assessment of how much reduction in contaminants is required to achieve the water quality goals of the sub-catchment.

2B. An assessment of the 2016 level or risk of losses of sediment, microbial pathogens, phosphorus and nitrogen from the property or land areas being farmed.

2C. An assessment of the level of reduction in losses of sediment, microbial pathogens, phosphorus and nitrogen that the property or land areas being farmed must make that is proportionate to the 2016 level of losses and proportionate to the water quality improvements that must be made in the sub-catchment.

3. An assessment of whether farming practices are consistent with each of the following objectives and principles and minimum standards listed in section 3; and
- a. a description of those farming practices that will continue to be undertaken in a manner consistent with the objectives and principles;
  - b. A description of those farming practices that are not consistent with the objectives or principles, and a description of the time bound actions or practices that will be adopted to ensure the objectives or principles are met.

### **3a – Management area: Whole farm**

#### **Objective 1**

To manage farming activities according to good farming practice, and in a way that minimises the loss of contaminants from the farm.

#### **Principles**

1. Identify the characteristics of the farm system, the risks that the farm system poses to water quality, and the good farming practices that minimise the losses of sediment, microbial pathogens, phosphorus and nitrogen.
2. Maintain accurate and auditable records of annual farm inputs, outputs and management practices.

#### **Minimum standards**

A. The following records must be retained for the life of the relevant consent and provided to Waikato Regional Council at its request:

- i. Records of stock numbers and stock classes, births and deaths, stock movements on and off the property, grazing records and transport records;
- ii. Total annual milk solids as stated in the milk supply statement;
- iii. Records of fertiliser type and amount, including annual accounts, and any records of fertiliser application rates and placement;
- iv. Quantity and type of feed supplements sold or purchased and used on the property;
- v. Water use records for irrigation (to be averaged over 3 years or longer) in order to determine irrigation application rates (mm/ha/month per irrigated block) and areas irrigated;
- vi. Crops grown on the property (area and yield), quantities of each crop consumed on the property, and quantities sold off farm; and
- vii. The Nitrogen Reference Point Data as defined in Schedule B clause d; and
- viii. Soil test data – including anion storage capacity.

3. Manage farming operations to minimise losses of sediment, microbial pathogens, phosphorus and nitrogen to water, and maintain or enhance soil structure.

### **3b – Management Area: Nutrient management**

#### **Objective 2**

To minimise nutrient losses to water ~~while maximising nutrient use efficiency.~~

#### **Principles**

4. Monitor soil phosphorus levels and maintain them at or below the agronomic optimum for the farm system.
5. Manage the amount and timing of fertiliser inputs, taking account of all sources of nitrogen and phosphorus, to match plant requirements and minimise risk of losses.

#### **Minimum standard**

B. Plan and undertake fertilizer application in accordance with Section 5 of the Code of Practice for Nutrient Management (with Emphasis on Fertiliser Use) Fertiliser Association 2013.

6. Store and load fertiliser to minimise risk of spillage, leaching and loss into waterbodies.
7. Ensure equipment for spreading fertilisers is well maintained and calibrated.
8. Store, transport and distribute feed to minimise wastage, leachate and soil damage.

#### **Objective 3**

To farm in accordance with the nitrogen management requirements of PC1.

#### **Principle**

*Either, where the property's NRP is  $\leq$  75th percentile:*

9a. Farm in a manner that does not result in farm nitrogen losses exceeding the farm's NRP;

*Or, where the property's NRP is  $>$  the 75<sup>th</sup> percentile but  $<$  than the 50<sup>th</sup> percentile:*

9b. Farm in a manner that results in farm nitrogen losses reducing below their estimated 2016 losses;

*Or, where the property's NRP is  $>$  than the 75th percentile*

9c. Farm in a manner that does not result in farm nitrogen losses exceeding the 75<sup>th</sup> percentile for the FMU; or

### **3c – Management Area: Waterways**

#### **Objective 4**

To minimise losses of sediment, microbial pathogens, phosphorus and nitrogen to waterways.

#### **Principles**

10. Identify risk of overland flow of phosphorus, sediment and microbial pathogens on the property and implement measures to minimise losses of these to waterbodies.

11. Locate and manage farm tracks, gateways, water troughs, self-feeding areas, stock camps, wallows and other sources of run-off to minimise risks to water quality.

**Minimum standards**

C. identify ephemeral waterways, overland flow paths and areas prone to flooding and ponding, and assess opportunities to minimise losses from these areas through appropriate stocking policy, stock exclusion and/or measures to detain floodwaters and settle out or otherwise remove sediment, nitrogen, phosphorus and microbial pathogens (e.g. detention bunds, sediment traps, natural and constructed wetlands); and

D. Assess of the risk of diffuse discharge of sediment, nitrogen, phosphorus and microbial pathogens from tracks and races and livestock crossing structures to waterways, and the identification of appropriate measures to minimise these discharges (e.g. cut-off drains, shaping); and

E. Identify areas where effluent accumulates including yards, races, livestock crossing structures, underpasses, stock camps, and feed-out areas, and assess and identify appropriate measures to minimise the risk of diffuse discharges of contaminants from these areas to groundwater or surface water; and

F. Identify other 'hotspots' such as fertiliser, silage, compost, or effluent storage facilities, wash-water facilities, offal or refuse disposal pits, and feeding or stock holding areas, and an assess and identify appropriate measures to minimise the risk of diffuse discharges of contaminants from these areas to groundwater or surface water. Where these 'hotspots' and effluent accumulating locations or facilities are located within 10 metres of a waterbody, a clear plan to relocate those facilities so they are further than 10 metres from a waterbody by 2026 must be included in the Farm Environment Plan.

**Objective 5**

To exclude stock from waterbodies and minimise stock damage to the beds and margins of wetlands and riparian areas.

**Principle**

12A. Exclude stock in a manner consistent with the requirements of Schedule C.

**Minimum standards**

G. Identify all waterbodies on the property or land areas being farmed that are identified in Schedule C.

H. Identify where existing fences will be maintained and where new fences are required to be installed to meet the requirements of Schedule C and identify a timeframe (prior to 2026) when all required fences will be installed.

I. Where stock are not excluded from waterbodies in accordance with Schedule C, identify those waterbodies (note: this triggers a more stringent resource consent process):

J. Identify the waterbodies identified in Schedule C that stock are not to be excluded from.

K. Identify the practical constraints that mean stock exclusion will not be achieved.

L. Identify the mitigation measures that will be undertaken to minimize stock access to the waterbodies identified in K (for example, lower stock rates in the affected paddocks, provision of alternative water and shade at least 20 metres away from the waterbody).

M. Identify the mitigation measures that will be undertaken to mitigate or remedy the impacts of stock access to waterbodies identified in K, for example sediment filters, edge of paddock wetland treatment or expanded planted riparian margins up or downstream of the affected stream.

12. In addition to the requirements of Schedule C, exclude stock from waterbodies to the extent that it is compatible with land form, stock class and stock intensity. Where exclusion is not possible, mitigate impacts on waterways.

**Minimum standards**

N. Where stock are not excluded from waterbodies, identify those waterbodies on the farm map:

O. Identify the practical constraints that mean stock exclusion will not be achieved.

P. Identify the mitigation measures that will be undertaken to minimize stock access to the waterbodies (for example, lower stock rates in the affected paddocks, provision of alternative water and shade at least 20 metres away from the waterbody)

Q. Identify the mitigation measures that will be undertaken to mitigate or remedy the impacts of stock access to waterbodies, for example sediment filters, edge of paddock wetland treatment or expanded planted riparian margins up or downstream of the affected stream.

~~13. Exclude stock in a manner consistent with the requirements of schedule C.~~

**3d – Management Area: Land and soil**

**Objective 6**

To minimise contaminant losses to waterways from soil disturbance and erosion.

**Principles**

14. Manage periods of exposed soil between crops/pasture to reduce risk of erosion, overland flow and leaching.

15. Manage or retire erosion-prone land to minimise soil losses through appropriate measures and practices.

**Minimum standards**

R. Identify actively eroding areas, erosion prone areas, and areas of bare soil and assessment and identify appropriate measures for erosion and sediment control and re-vegetation.

16. Select appropriate paddocks for growing crops and intensive grazing, recognising and mitigating possible nitrogen and phosphorus, faecal, and sediment loss from critical source areas.

**Minimum standards**

S. The provision of minimum cultivation setbacks of 10 metres from all waterbodies

T. The identification of slopes over 15° and how cultivation on them will be avoided; unless contaminant discharges to water bodies from that cultivation can be avoided; and

- (i) Identify how the adverse effects of cultivation on slopes of less than 15° will be mitigated through appropriate erosion and sediment controls for each paddock that will be cultivated including by:
  - (a) assessing where overland flows enter and exit the paddock in rainfall events; and
  - (b) identifying appropriate measures to divert overland flows from entering the cultivated paddock; and
  - (c) identifying measures to trap sediment leaving the cultivated paddock in overland flows; and
  - (d) maintaining appropriate buffers between cultivated areas and water bodies (minimum 10 metre setback).

17. Manage grazing and crops to minimise losses from critical source areas.

**Minimum standards**

U. An assessment of appropriate land use and grazing management for specific areas on the farm in order to maintain and improve the physical and biological condition of soils and minimise the diffuse discharge of sediment, nitrogen, phosphorus and microbial pathogens to water bodies, including:

- (i) matching land use to land capability; and
- (ii) identifying areas not suitable for grazing; and
- (iii) stocking policy to maintain soil condition and pasture cover; and
- (iv) the appropriate location and management of winter forage crops; and
- (v) suitable management practices for strip grazing.

**3e – Management Area: Effluent**

**Objective 7**

To minimise contaminant losses to waterways from farm animal effluent.

**Principles**

18. Ensure the effluent system meets industry-specific Code of Practice or equivalent standard.



19. Have sufficient storage available for farm effluent and wastewater and actively manage effluent storage levels.

**Minimum standard**

V. Appropriate storage volumes will be calculated using the Storage Pond Calculator and if sufficient storage is not currently available on the property it will be installed by 2026.

20. Ensure equipment for spreading effluent and other organic manures is well maintained and calibrated.

21. Apply effluent to pasture and crops at depths, rates and times to match plant requirements and soil water holding capacity.

**3f – Management Area: Water and irrigation**

**Objective 8**

To operate irrigation systems efficiently and ensuring that the actual use of water is monitored and is efficient.

**Principles**

22. Manage the amount and timing of irrigation inputs to meet plant demands and minimise risk of leaching and run off.

23. Design, check and operate irrigation systems to minimise the amount of water needed to meet production objectives.

4. The FEP shall include for each objective and principle in section 3 above:

a) Detail and content that reflects the scale of environmental risk posed by the activity

b) A defined and auditable description of the actions and practices to be undertaken to farm in accordance with the objectives and principles in Part B;

c) The records and evidence that must be kept that demonstrate performance and the achievement of an objective or principle listed in Part B.

**PART C – FEP REVIEW REQUIREMENTS**

The FEP shall be reviewed by a Certified Farm Environment Planner for consistency with this schedule:

1. Prior to lodging a landuse consent application with the Council under rule 3.11.5.3 – 3.11.5.5 of PC1; and

The FEP and the farming activities shall be reviewed by a Certified Farm Environment Planner for consistency between the farming activities and the FEP:

2. Within 12 months of the granting of that consent application; and

3. In accordance with the review intervals set out in the conditions of that resource consent.

The purpose of the first review is to provide an expert opinion on whether:

a) the FEP is consistent with the FEP objectives and principles set out in Part B of this schedule, and

b) whether the current farming activities on the property are being undertaken in a manner consistent with the description of current farming activities set out in the FEP.

The purpose of the subsequent reviews are to provide an expert opinion whether the farming activities on the property are being undertaken in a manner consistent with the FEP objectives and principles set out in Part B of this schedule.

The reviews shall be undertaken by a Certified Farm Environment Planner who holds a reviewing endorsement (issued by WRC), and must be undertaken in accordance with the review process set out the Waikato Regional Councils FEP Independent Review manual. The review shall be undertaken by re-assessing the FEP in accordance with the requirements set out in this schedule.

The results of the review shall be provided to the Waikato Regional Council, within 20 working days of the review due date.

#### **PART D – FEP CHANGES**

Unless otherwise required by the Waikato Regional Council in accordance with any conditions of the resource consent, changes can be made to the FEP without triggering the need for review by a CFEP, provided:

- 1A. The nature and scale of the farming activity does not materially change from that authorized by the resource consent for the property (for example the farming type does not change and the stocking rate does not materially change), and
- 1B. The nature, scale or extent of the losses of sediment, microbial pathogens, phosphorus and nitrogen from the farm property does not materially change from those when the farming activity was first authorized by the resource consent, and
- 1. The farming activity remains consistent with Part B of this schedule including compliance with Objective 3, farming in accordance with the nitrogen management requirements of PC1 ~~–and~~
- 2. The change to the FEP does not contravene any mandatory requirement of the resource consent, or any requirement of the Regional Plan that is not already authorised ~~–and~~
- 3. The nature of the change is documented in writing, including provision of updated OVERSEER modelling where this is appropriate, and made available to any CFEP undertaking a review, ~~or~~ and to the Waikato Regional Council, within 20 working days of the change to the FEP ~~on request~~.

All material changes will require review by a CFEP. For the avoidance of doubt, material changes include all change that could have more than a *de minimis* effect on the environment, considered on an individual basis or a cumulative basis in the relevant subcatchment or catchment.