

BEFORE THE MT WELCOME EXPERT CONSENTING PANEL

IN THE MATTER of an application for approvals under section 42 of the Fast Track Approvals Act 2024 (the Act)

AND

IN THE MATTER of the Application for approvals by Pukerua Property Group Partnership for Mt Welcome, Pukerua Bay, Porirua Project including resource consents, a wildlife permit, an archaeological authority and a complex freshwater fisheries approval to develop residential allotments, an allotment and preparatory works to enable a future commercial centre and associated infrastructure in Pukerua Bay, Porirua. Application FTAA-2603-1181

JOINT STATEMENT OF EXPERTS IN THE FIELD OF AQUATIC ECOLOGY AND WETLANDS

Dated 18 August 2026

INTRODUCTION

1. Expert conferencing of the topic of aquatic ecology and wetlands took place by videoconference on 18 August 2026.
2. The conference was attended by:
 - a. Vaughan Keesing (VK) on behalf of the applicant;
 - b. Katy Grant (KG) on behalf of the applicant;
 - c. Tayla Hooker (TH) on behalf of the Director General of Conservation;
 - d. Katie Collins (KC) on behalf of the Director General of Conservation;
 - e. Ella Jaspers (EJ) on behalf of Te Rūnanga o Toa Rangatira;
 - f. Rawiri Faulkner (RF) on behalf of Te Rūnanga o Toa Rangatira;
 - g. Melanie Dixon (MD) on behalf of Greater Wellington Regional Council;
 - h. Gareth Taylor (GT) on behalf of Greater Wellington Regional Council; and
 - i. James Blyth (JB) on behalf of Greater Wellington Regional Council.
3. Gary Bramley acted as facilitator and assisted the experts to draft the Joint Witness Statement

CODE OF CONDUCT

4. The experts confirm that they have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and agree to comply with it. The experts confirm that the issues addressed in this Joint Witness Statement are within their area of expertise, unless stated otherwise.

SCOPE OF STATEMENT

5. In our conference we discussed the issues relevant to the Application which arise within our field of expertise. Prior to attending the conference,

we each read the relevant parts of the Application, the evidence and independent reports prepared by the other expert(s) and circulated.

6. The issues are:

- a. Location of the roundabout;
- b. Wetland delineation/identification of natural inland wetlands/applying MfE guidelines/application of the pasture exclusion test;
- c. Value of the existing wetlands;
- d. Presence of seepages and flushes/naturally uncommon ecosystems;
- e. Insufficient fish surveys/inadequate site coverage of fish surveys;
- f. Scale of the assessment/Application of EIANZ guidelines;
- g. Status of long fin eels;
- h. Fish passage;
- i. Adequacy of the fish management plan/need for a fish salvage plan;
- j. Freshwater fisheries regulation approvals;
- k. Application of SEV method;
- l. Use of wetlands to offset stream loss;
- m. Aquatic habitat quality;
- n. Establishment of plants in retention wetlands;
- o. Wetland offsetting - quantum/doesn't comply with best practice principles of offsetting/lack of transparency;
- p. Adequacy of conditions relating to offsetting;
- q. Riparian planting width;
- r. Suitability of treatment wetlands for offsetting (noting retention wetlands don't have a treatment function);
- s. Delivery and maintenance of ecological outcomes with respect to wetland offsetting/risk that offsetting won't occur;
- t. Downstream effects of the retention wetlands on stream ecology and offsite wetlands;
- u. Effects of changes in hydrological regime;
- v. Linking effects with staging and avoidance/minimisation/remediation/offsetting. Time lag between wetland and stream loss and implementation of offsetting;
- w. Need for an integrated water quality/ecological/hydrological management plan; and

- x. Vesting of retention wetlands in Tiaki Wai.
7. Matters 11, 13, 16, 19, 20, 21 and 24 were not addressed due to a shortage of time.
8. In relation to each issue, we discussed points of agreement and disagreement in relation to:
- a. Facts;
 - b. Assumptions;
 - c. Areas of uncertainty or lack of information; and
 - d. Expert opinions / conclusions.
9. In this Joint Statement we report the outcome of our discussions in relation to each issue by reference to points of agreement and disagreement relating to facts, assumptions, uncertainties and expert opinions / conclusions. We have noted where each of us is relying on the opinion or advice of other experts. Where we are not agreed in relation to any issue, we have set out the nature and basis of that disagreement.
10. There was insufficient time in the day allocated for the conference to provide answers to all of these questions with the experts endeavouring to prioritise the questions in terms of their responses. Where questions have not been answered because of insufficient time, these are noted. We are aware that the current conditions offered by the applicant do not capture what has been discussed and agreed in this forum and may need to be amended, or some of the conditions proposed by GWRC adopted.

ISSUE 1 – Location of the roundabout

FACTS

11. There are no agreed facts in relation to this matter.

ASSUMPTIONS

12. The following assumptions are agreed:
- a. The roundabout is a product of Waka Kotahi/NZTA requirements. Waka Kotahi/NZTA are not proposing to reduce the speed limit to 50km/h which would enable traffic lights. On that basis a roundabout of a particular size is required. There is a trade off between effects on the

stream and effects on the SNA. Placement and size is driven by NZTA requirements.

EXPERT OPINIONS

13. The following expert opinions were expressed in relation to this matter:

- a. GT noted that it is unclear if there is a functional need to pipe the stream to accommodate the roundabout – was diversion considered?
- b. VK responded that diversion was considered, but would result in a larger footprint, including clearance of additional SNA vegetation. Because it is quite a steep gully and there is a wetland in the way, it was technically challenging, so the piped solution was adopted. VK didn't know the reasons for not locating the roundabout elsewhere.
- c. TH noted that the possibility of diversion wasn't captured in the terrestrial ecology conferencing, it would be helpful to document the process so we can understand how the effects management hierarchy was applied.
- d. KC considered that diversion is preferable to avoid permanent stream loss via the culvert. Having an understanding of the rationale for locating the roundabout at that particular location would help understand if it needed to be there.
- e. RF, GT are of the opinion that there is not enough technical information to understand the decision and see what alternatives were considered.

AREAS OF UNCERTAINTY

14. The following areas of uncertainty is agreed in relation to this matter:

- a. All agree: Not enough design and engineering information has been provided to understand what options were considered, how alternatives were ruled out (e.g. moving the roundabout further south, why the speed limit couldn't be reduced enabling alternatives with a smaller footprint) and how the effects management hierarchy was applied to avoid/mitigate effects. Having this information would assist in understanding why the design is the way it is.

- b. The date of the construction of the roundabout depends on staging and remains unknown at present.

IMPORTANCE

- 15. The following is agreed in relation to the importance of this issue:
 - a. The piping of the stream results in a permanent loss of stream length which should be avoided to the extent possible. Without understanding the rationale and decision making with respect to the roundabout location, it remains unclear whether all alternatives have been considered.

ISSUE 2 – Wetland delineation/identification of natural inland wetlands/applying MfE guidelines/application of the pasture exclusion test

FACTS

- 16. No facts were identified in relation to this issue.

EXPERT OPINIONS

- 17. Expert opinions in relation to this matter were as follows:
 - a. VK considers that he is experienced in wetland delineation. While guidelines provide for pasture exclusion for continuation of grazing, the NPS-FM does not make that distinction and if the area meets the pasture exclusion it can be excluded from the identified wetland.
 - b. MD advised that GWRC follows the wetland delineation guidelines (MFE, 2022) and would not apply pasture exclusion in this instance and would consider the areas to be natural inland wetlands. This is probably a legal matter rather than a purely ecological one.
 - c. KC confirmed that the D-G's position is that guidelines are incorporated by reference so it has the same standing as the text in the NPS and forms part of the document. Agree this is a legal matter as well as an ecological one.
 - d. TH noted that there will be a loss of wetland function/extent that is not captured in a legal opinion. Her preference is that these areas of pasture wetland are captured as wetlands and included in the effects management hierarchy and offset proposals. MD agreed.

- e. TH, KC, MD agree (KG, JB, GT, WF, EJ, RF abstain): The determination of whether the pasture exclusion applies to wetlands within the site is a legal matter as well as an ecological one. Whether the pasture wetlands are included or not has implications for the quantum of offsetting required to address effects and if they are included then the quantum of offsetting needs to be increased to account for that.
- f. VK disagrees with the statement in e), his view is that whether the pasture exclusion applies is a legal matter only.
- g. TH noted that soil tests in accordance with the guidelines were not applied throughout the site because the majority of the putative wetlands met the pasture exclusion test or the vegetation tests to be considered a wetland and were not considered further. Her view is that vegetation tests are just one component, the use of soil sampling (as set out in the protocol) would have helped demonstrate the ongoing ecological functioning and value of the pasture wetlands under discussion. In the pasture wetlands the vegetation was dominated by facultative (FAC or FAC-W) plants.

ASSUMPTIONS

- 18. No material assumptions were identified in relation to this matter.

UNCERTAINTIES

- 19. The following uncertainty was agreed in relation to this matter:
 - a. Whether the wetlands that meet the pasture exclusion test should be included in the extent of wetland loss or not remains unresolved.

IMPORTANCE

- 20. Whether the wetlands which meet the pasture exclusion test are included in the extent of wetland loss or not substantially affects the amount of wetland affected and therefore the extent to which wetland offsetting is required. At present they are not included and if they were to be included additional wetland offsetting would be required.

ISSUE 3 – Value of the existing wetlands

FACTS

- 21. No relevant facts were identified in relation to this matter.

ASSUMPTIONS

22. No assumptions were identified in relation to this matter.

EXPERT OPINIONS

23. The following expert opinions were expressed in relation to this matter:

- a. VK's view is that the pasture wetlands are not functioning as wetlands and have been degraded by at least 90 years of agricultural use/grazing and their value is 'very low' and they are not significant in terms of Policy 23 of the RPS.
- b. KC's opinion is that the wetlands on the site are showing signs of impairment associated with rural land use. Those impacts are reversible. These are the headwaters of valuable downstream freshwater and coastal environments. The value of these wetlands has been underestimated in the application. MD agrees.
- c. TH considers that those wetlands identified as natural inland wetlands meet the representativeness and rarity criteria in the GWRC Regional Plan for assessing ecological significance. At the very least they would be considered of "moderate" ecological value. They wouldn't meet diversity and pattern and connectivity criteria individually, but collectively they may have low – moderate diversity and pattern and connectivity across the site. Clearer mapping of the location, type and nature of wetlands would assist in making that assessment. MD agrees.
- d. JB noted that research has shown that even highly degraded wetlands perform an important nutrient removal role [see references 4 – 6 in the reference list].
- e. VK added that there is also research that shows grazed wetlands don't function any differently to pasture in terms of nutrient capture/removal (Luo et al 2000, Rutherford et al 2009, Zaman et al 2008).
- f. MD noted that she undertook her own values assessment as set out in Appendix 1, Table 1 in her substantive application comments (Appendix 5 of GWRC's comments). This concludes that the wetlands have 'moderate' value, with the exception of pasture wetlands which have 'low' value.
- g. MD, TH, KC agree (JB, GT, KG, WF, EJ abstaining) The value of the wetlands across the site has been underestimated and

assigning them higher value increases the level of effects and therefore the degree to which mitigation/offsetting is required.

IMPORTANCE

24. The following is agreed in relation to the importance of this issue:

- a. Assigning value to the wetlands directly affects the overall level of effect. If wetlands are undervalued, the quantum and nature of offsetting may also be underestimated resulting in residual effects that are not offset.

ISSUE 4 – Presence of seepages and flushes/naturally uncommon ecosystems (Williams et al. 2007).

FACTS

25. No relevant facts were identified in relation to this matter.

ASSUMPTIONS

26. No assumptions were identified in relation to this issue

EXPERT OPINIONS

27. The following expert opinions were expressed:

- a. VK, MD, KC agree (JB, GT, KG, WF, EJ abstaining) that there are no indigenous representative seepages and flushes and no naturally uncommon ecosystems present on the property. There are seepages as per Johnson and Gerbeaux (2004), but not as per Williams et al. (2007), i.e., the seepages and flushes present are modified to varying degrees and the vegetation is predominantly exotic.
- b. TH disagreed and considers that the seepages present meet the definition¹ of Johnson and Gerbeaux (2004). TH's view is that seepages are a type of wetland function that needs to be accounted for and mapped properly and this is not currently dealt with transparently in the application. Seepages and their wetland function cannot be offset, but they need to be accounted for. It was hard to determine from the information provided what was seepage loss and what were other types

¹ An area on a slope which carries a moderate to steady flow of groundwater, often also surface water, including water that has percolated to the land surface, the volume being less than that which would be considered as a stream or spring. Substrate ranges all the way from raw or well-developed mineral soil to peat; nutrient status and pH range from low to high; and the water table varies from just above the ground surface to a slight depth below. Seepages are located primarily where groundwater diffuses to the surface, especially at a change of slope, or where an impermeable basement raises the water table.

of wetland loss. The steps to avoid the loss of such wetlands need to be clearly demonstrated.

- c. MD clarified that the wetlands present appeared to be seeps, swamps and potentially marshes.

IMPORTANCE

28. The following is agreed in relation to the importance of this issue:

- a. Classification of wetland type is relevant to wetland offsetting decision making. Inappropriate classification would not result in like for like offsetting, or transparency in relation to out of kind exchanges.

ISSUE 5 – Insufficient fish surveys/inadequate site coverage

FACTS

29. The following facts are agreed in relation to this matter:

- a. Fish passage must be provided.

ASSUMPTIONS

30. No assumptions were identified in relation to this matter.

EXPERT OPINIONS

31. The following expert opinions were expressed in relation to this matter:

- a. VK considers that given the condition of the waterways (high sediment load and limited water apart from Kakaho West) as well as the extent of the waterways, spotlighting and eDNA are sufficient to characterise and typify the fish communities and the relative abundance of fish. Given that the applicant accepts that fish passage has to be provided and proposes to do so, he doesn't see what additional benefit (if any) further fish surveys would confer.
- b. KC accepts that some of water bodies aren't suitable for electric fishing, but either further survey effort is warranted or what we have before us is not sufficient to rule out the presence of fish at some locations. Two single eDNA samples over such a large site is not best practice. DOC's advice with respect to getting representative samples is to collect six

replicates. eDNA is presence/absence only, it doesn't give any information with respect to abundance. In terms of practical impact on the proposal, having this information could affect details of fish passage provision, fish salvage locations, calculation of SEVs and assessment of stream value and therefore offsetting.

- c. VK, GT, KC agree (JB, GT, KG, WF, EJ, MD abstaining) that fish salvage should be undertaken in all intermittent and perennial watercourses and standing water. VK will make that change where required.
- d. VK agrees that additional survey might change the IBI and SEV, but it wouldn't affect the score and therefore the outcome, the management response adopted would be the same.
- e. GT, KC agree additional survey information wouldn't affect the calculation of the offset score, but the other points identified in item b) above remain valid.
- f. In relation to fish survey and design of fish passage, given the known downstream constraints, GT and KC are of the view that at present the fish passage is designed for only the species that have been detected upstream of the constraints. If surveys were undertaken downstream of the constraints, the design for fish passage may include provision for species with poorer climbing ability that may be able to reach the site if the downstream constraints were removed.

UNCERTAINTIES

32. No uncertainties were identified in relation to this issue.

IMPORTANCE

33. If additional fish species were detected in further surveys this could affect the specifics of fish passage provision to better reflect the fish species present as well as fish salvage locations, calculation of SEVs and assessment of stream value.

ISSUE 6 – Scale of the Assessment/Application of the EIANZ guidelines

FACTS

34. The following facts are agreed in relation to this matter:

- a. Section 5.2 of the Ecological Assessment uses the EIANZ guidelines for assessing the level of ecological effects and states:
"The magnitude of the effect of the loss of gully wetland in each main catchment is considered as a proportion of the similar or better habitat within the Taupo swamp catchments between Plimmerton and Pukerua Bay for the western draining systems, and in the Kakaho west and Kakaho east for those systems."
- b. The recent EIANZ explanatory note supporting the application of the Ecological Impact Assessment: EIANZ Guidelines (EIANZ 2026) was issued because EIANZ became concerned that practitioners were assessing ecological values at one scale, then assessing effect magnitude at a much larger scale, which can artificially reduce the apparent level of effect. (See also advice obtained on this matter from -Dr Ian Boothroyd, Vice President of EIANZ detailed in paragraph 46 of KC substantive application comments appended to the Director General of Conservations comments on the proposal).
- c. The explanatory note reiterates that:
 - i. ecological value and effect magnitude should generally be assessed at the same spatial scale, and
 - ii. wider landscape or catchment context should inform the assessment but not replace the scale at which values were assessed.
- d. The note specifically warns against using the existence of abundant habitat elsewhere to dilute the significance of loss at the affected site.

35. The following matters are not agreed in relation to this matter:

- a. Section 4.2 of the Ecological Assessment assesses the value of the wetlands as 'low' to 'negligible' and the level of effect associated is 'very low' in terms of the EIANZ guidelines.

ASSUMPTIONS

36. No assumptions were identified in relation to this matter.

EXPERT OPINIONS

37. The following expert opinions were expressed in relation to this matter:

- a. VK considers that he has applied the guidelines correctly. He is aware of the recent explanatory note and has been applying the guidelines consistent with that (noting that it wasn't available at the time he did the assessment).
- b. KC noted, and TH agrees, that by comparing the loss of habitat within each main catchment, the magnitude of the impact at the site is minimised. In contrast, the EIANZ Guidelines explicitly refer to 'site' when describing criteria for magnitude of effect. The Ecology report repeatedly concludes that wetland effects are "very low" or "less than minor" because losses are compared against the wider catchment resource. EIANZ explicitly says this approach may minimise the extent of effect to such a degree that mitigation, offsetting or monitoring are no longer properly considered. The EIANZ note specifically cautions against this sort of scale amplification. By comparing the loss at the scale of the catchment the loss of the wetlands within the site is minimised.
- c. MD noted that her assessment uses a more appropriate scale (wetland sub-catchment). MD covers this matter in paragraph 12 of her substantive application comments appended to GWRC comments on the proposal. MD considers she has followed the guidelines as intended. KC and TH agree.
- d. VK's view is that the rarity of wetlands is arguable – the induced and other wetlands with exotic vegetation are not rare (including at this site) – what is rare are wetlands with indigenous vegetation. He considers that he has followed the guidelines as intended.

UNCERTAINTIES

38. No uncertainties applying to this issue were identified.

IMPORTANCE

39. The scale at which the values and effects are assessed is central to estimating the overall level of effects and feeds directly into offset

calculations. Undervaluing ecological attributes would result in insufficient or inappropriate offsetting being applied.

ISSUE 7 – Status of long fin eels

FACTS

40. The following facts are agreed in relation to this matter:

- a. VK, GT, KC agree (JB, TH, KG, WF, EJ abstaining). Dunn et al. (2025) assign longfin eel to the threat ranking “At Risk – Declining”.

IMPORTANCE

41. ‘At Risk’ species have ‘high’ ecological value in terms of the EIANZ guidelines.

ISSUE 8 – Fish passage – including provision of fish passage when downstream barriers limit passage

FACTS

42. The following facts are agreed in relation to this matter:

- a. Fish passage through the culvert to be installed in Taupo Stream is compromised by at least two downstream barriers in Taupo Stream. Until fish passage issues at downstream barriers are removed, fish may not be able to reach the site.

EXPERT OPINIONS

43. The following expert opinions were expressed in relation to this matter:

- a. GT, VK, KC agree (MD, KG, TH, JB, EJ, RF abstained) that providing fish passage throughout the site is desirable, regardless of the downstream barriers. Design should be in accordance with the 2025 guidelines not the previous ones.
- b. KC noted that one of the options for offsetting within the Taupo Stream catchment could be to look at the lower catchment and remove barriers to fish passage. Acknowledge it is not straightforward, but considers it worth investigation.

- c. VK is of the opinion that since it involves third parties, downstream offsetting may not be practicably achievable. The two main barriers are the walkway and a downstream crossing of SH59.
- d. GT, VK and KC (others abstaining) agree that removing low culverts in the catchment has a high value for offsetting via providing fish access to the upper catchment and that this would reduce the amount of offsetting required on site.

UNCERTAINTIES

44. GT, VK and KC agree (others abstaining) that the following uncertainties apply to this issue:

- a. The viability of removing downstream barriers for offsetting remains unknown.

IMPORTANCE

45. Removal of downstream barriers to fish passage (where achievable) would 'unlock' the upper catchment for invertebrate and fish species moving through the catchment and others returning from sea.

ISSUE 9 – Adequacy of the fish management plan/need for a fish salvage plan

FACTS

46. No facts were agreed in relation to this matter.

EXPERT OPINIONS

47. The following opinions were expressed in relation to this matter:

- a. GT and VK (others abstaining) recognise that the draft plan provided requires certification and that it can be adapted to accommodate the staging and any future changes to the project. This approach requires an update to the existing conditions.

UNCERTAINTIES

48. No uncertainties were identified in relation to this issue.

IMPORTANCE

49. The fish management plan (including fish salvage) provides the basis for effects management with respect to fish and needs to be fit for purpose.

ISSUE 10 – Freshwater fisheries regulation approvals

FACTS

50. The following facts are agreed in relation to this matter:

- a. Construction of permanent dams is a 'complex freshwater fisheries activity' under (b) of the definition in Section 4 of the FTAA
- b. The applicant proposes to construct five permanent dam which enable construction of the retention wetlands.
- c. At retention wetlands B and E the permanent dams will be constructed to enable fish passage past the dams via the associated culverts at those locations.
- d. The application does not propose to provide fish passage into/out of retention wetlands A, C, D and culvert P-39. In addition, the application states that Culverts P-36 (Retention Wetland C), P-37 (Retention Wetland A) and P-39 (upgrade for existing culvert E-18) do not provide for fish passage since there are no fish present in these waterways. These are therefore complex freshwater fisheries activities under the Fast-Track Act definition as "(a) a culvert or ford that permanently blocks fish passage".

EXPERT OPINIONS

51. The following expert opinions were expressed in relation to this matter:

- a. VK considers there is no fish habitat above culvert 39, but it should be achievable to install it so that it is not a barrier because of the low grade.
- b. VK clarified that there are five permanent dams proposed to be constructed as part of the retention wetlands and these do not currently provide fish passage out of/into retention wetlands A, C and D. A and C are intended to have fish passage, but presently the application doesn't reflect that. This matter needs to be amended, along with the engineering drawings and associated reports to reflect the provision of fish passage.

UNCERTAINTIES

52. No uncertainties relating to this issue were identified.

IMPORTANCE

53. Provision of fish passage throughout the catchment is required.

ISSUE 11 – Application of the SEV method

54. This matter was not discussed.

ISSUE 12 – Use of wetlands to offset stream loss

FACTS

55. No facts were identified in relation to this matter.

EXPERT OPINIONS

56. The following expert opinions were expressed in relation to this matter:

- a. VK considers that creation of permanent water retention features (which are wetlands) also provides suitable (but different) habitat for fish. It provides a greater extent of habitat than currently, so the outcome is:
 - i. better fish habitat; and
 - ii. more fish habitat, albeit different habitat to that present currently.
- b. VK considers that some of the extent of retention wetlands is remedial, some is offsetting and some is addressing loss of streams. One of the issues with this site is that there is no suitable like for like option available to offset stream loss.
- c. TH, KC, GT (others abstaining) agreed that like for like (stream for stream) offsetting is generally the preferred approach and that this approach (wetland for stream) would not deliver no net loss or better in terms of stream extent and values as required by the NPS-FM.
- d. TH, KC and GT consider that greater transparency about the application of the effects management hierarchy and the process of arriving at the point of offset and compensation would be preferred, including exploring reasonable compensation if stream loss is unavoidable.
- e. VK reiterated that in his view the outcome is better in terms of habitat quality for fish.

- f. VK and GT agree that retention wetlands are suitable for offsetting of stream loss at this location, provided that:
 - i. the open water areas need to be vegetated;
 - ii. outside open water areas soils need to be saturated;
 - iii. any areas subject to stormwater maintenance should be excluded;
 - iv. fish passage needs to be provided for; and
 - v. they need to be subject to robust performance monitoring. Should the monitoring prove the wetland habitat is temporarily unsuitable for fish during drought conditions (or similar) then a contingency response/remedy is required to salvage any fish that are stranded.
- g. TH and KC disagree (others abstain) with point f) above. In their view the ecological functions are so different that they are not like for like. Edge vegetation along streams and wetlands is very different as well.
- h. RF and EJ stated that from a cultural perspective, the removal of watercourses is not easily addressed via an offset that is not like for like and they share the concerns of TH and KC.
- i. VK, GT, KC (others abstained) consider that fish passage should be provided to all wetlands provided as an offset (A, B, C, E). Water quality should be monitored to confirm that it is not limiting fish habitat.
- j. KG confirmed that hydrology modelling does indicate there will be periods of no flow out of the culverts (particularly in summer). Modelling overestimates that by underestimating the local groundwater contribution. Monitoring of water quality in the wetlands is anticipated and can be provided for in the ecological and hydrological management plan.
- k. GT asked what the management response would be if the areas dried up/water quality declined to the point where fish were affected? Would fish be salvaged?
- l. VK confirmed that this matter needs to be addressed in the eco/hydrology management plan. He noted that the streams associated with A, B and C (not the Kakaho west) in particular are already quite limiting in summer and it is not going to be worse than it is currently.

- m. KC is of the view that since fish passage is not provided into or out of the retention wetlands A, C and D, the habitat created is not available. B and E have permanent dams with fish passage provided.
- n. VK – My understanding is only the northern most one does not allow fish passage. The rest do.
- o. GT – AEE, engineering documents and the Complex Fisheries Application say or indicate that A, C and D don't provide for fish passage.
- p. VK considers that D is a wetland and has no aquatic habitat. A and C do provide aquatic habitat and therefore should have passage, noting that there is not much potential habitat upstream at those locations. Also noting that providing fish passage will not fix downstream barriers to fish passage, so he wouldn't accept a condition around fish monitoring, because they may never get there, but fish passage should be achievable.
- q. KG – C is ephemeral, but there will be flow.

UNCERTAINTIES

57. The following uncertainties were identified in relation to this matter:

- a. JB asked if these wetlands were vested to Tiaki Wai, would they be responsible for this monitoring and contingency response?
- b. GT considered that that matter would be determined by condition of consent and would be the consent holder at the time it occurred.

IMPORTANCE

58. As above in relation to fish passage provision.

ISSUE 13 – Aquatic habitat quality

59. This matter was not discussed.

ISSUE 14 – Wetland offsetting – quantum/doesn't comply with best practice principles of offsetting/lack of transparency

FACTS

60. No relevant facts were identified in relation to this matter.

EXPERT OPINIONS

61. The following expert opinions were expressed in relation to this matter:

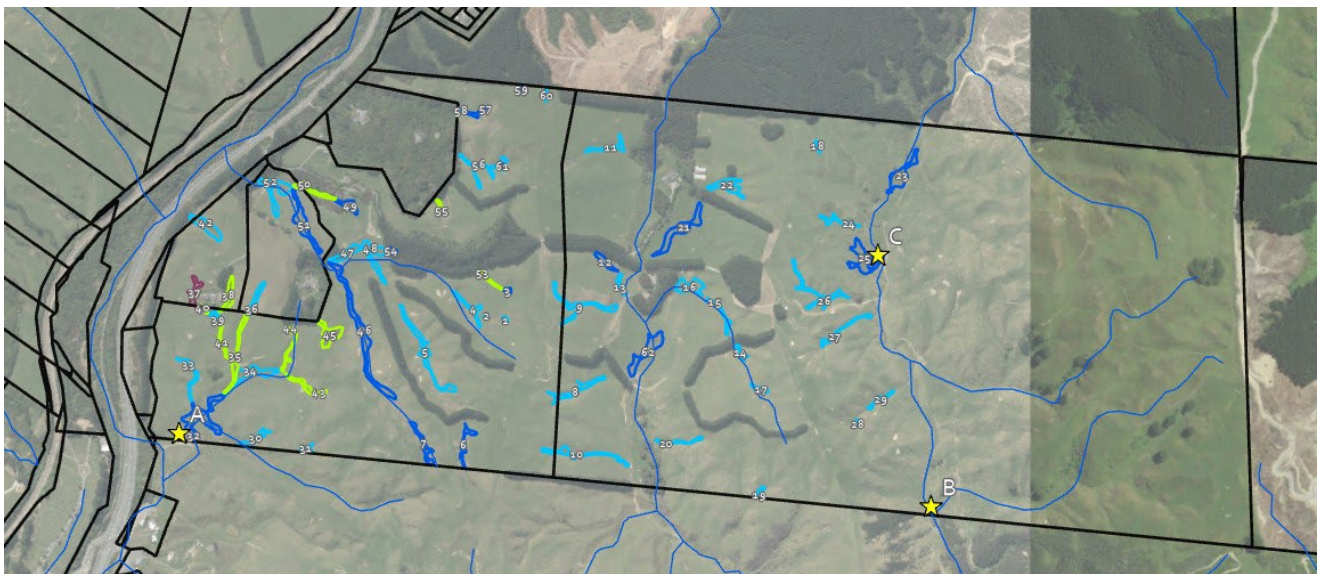
- a. VK considers that the wetlands are heavily modified, low value, degraded by landuse and livestock and have no indigenous biodiversity value and low function.
- b. VK confirmed that there is not enough room to replace all wetland areas that are lost, so there is an overall loss of extent, but in his view restoring remaining wetlands and construction of the retention wetlands more than addresses wetland losses. In the absence of any other landuse these wetlands will remain as they are. The enhancement of the gully wetlands in a 1:1 ratio is more than adequate to address effects.
- c. VK confirmed that he has estimated c. 7,000m² of pasture wetland would be removed and 12,000m² of retention wetland provided to address that. A further 15,311m² may be lost and may have to be offset (depending on whether pasture wetlands are included or not). Overall, there is a loss of c. 1ha of wetlands on site. In his view improving the wetland quality or remaining wetlands is sufficient to address this loss of extent. In his view there is no location to provide additional offset.
- d. MD, TH and KC consider that enhancement of existing wetlands is standard mitigation that you would expect to see in a project of this nature to address hydrological or other impacts. As well as enhancing remaining wetlands, it is also necessary to address the loss of extent. They remain unconvinced that there is not sufficient space to do that on the wider site.
- e. TH, KC are of the opinion that the current proposal lacks additionality (one of the principles of offsetting set out in the NPS-FM). Planting in the gullies and stormwater management would need to apply irrespective of any wetland loss, so there needs to be additional actions to achieve offsetting. Furthermore, they consider that there is a need to account accurately for the loss of extent. They remain unconvinced that there is net gain with respect to ecological outcomes for wetlands resulting from the proposal.
- f. VK confirmed that none of the retention wetlands are treatment wetlands, so there is no requirement to plant the gullies for mitigation.

- g. MD, TH and KC (others abstaining) consider that the offset as proposed does not follow best practice and is likely insufficient to offset the anticipated effects.
- h. TH added that development of a quantum would require application of modelling (such as a Biodiversity Offset Accounting Model (BOAM) or similar). Offsetting opportunities nearby should be considered as well those on site.
- i. MD's opinion was that hydrological interventions such as bunding/digging may be required to achieve wetland creation on site. These options do not appear to have been fully explored.
- j. VK noted that he looked carefully to identify opportunities but did not find any within the site.
- k. TH stated that it would be helpful to see that consideration of potential opportunities reflected in the reporting. Also, *providing a BOAM would help understand the thinking and understand the rationale for how the final package was arrived at. Applying appropriate attributes and benchmarks will be important. Attributes could include FAC-, FAC-W percentage cover, hydric soil presence.
- l. MD considered that if the BOAM ended up requiring less than 1:1 because of the degraded state of the existing wetlands, you would still look to provide at least 1:1 replacement for wetland loss. She notes that had the Wetland Ecological Valuation methodology which was accepted for Plimmerton Farm been used it would result in a greater than 1:1 wetland replacement (see paragraph 36 of her substantive application comments appended to GWRC comments on the proposal). However, the use of the WEV as a tool hasn't been published and peer reviewed.
- m. In VK's view, a less than 1:1 outcome is likely where it would end up, and therefore the BOAM is redundant because there is the ability to achieve so much improvement of wetlands.
- n. JB asked whether the position of the retention wetlands was determined by achieving hydraulic neutrality and then wetland creation was layered on that or was it the other way around? His opinion is that if the hydrology management was approached differently, then you may have had different options for wetland offsetting.
- o. VK confirmed that achieving hydraulic neutrality was the first goal.

- p. RF pointed out that we are looking at the offsetting measures in isolation rather than the project in the round. There is not enough information/evidence to give Te Rūnanga o Toa Rangatira satisfaction that the offset management actions are the right ones and will result in a positive ecological outcome.
- q. MD has identified additional areas within the site as set out in the application that she considers would be suitable for wetland offsetting as set out in the following figure and comprising:

- i. Area A: Flat land to the south-west of Wetland 32
- ii. Area B: Around the stream confluence
- iii. Area C: Joining wetlands 23 and 25 and possibly south of 25.

62. Note that she has not walked over these sites nor investigated them in any detail. She also notes that if there are not opportunities on site for wetland offsetting, then other opportunities in the catchment should be explored.



UNCERTAINTIES

63. No uncertainties were identified in relation to this issue.

IMPORTANCE

64. Transparency is an important requirement of offsetting in order to understand exactly what is proposed and what (if any) ecological trade-offs are involved.

ISSUE 15 – Adequacy of conditions relating to offsetting

65. This matter was not discussed.

ISSUE 16 – Riparian Planting width

FACTS

66. No facts were identified in relation to this matter.

EXPERT OPINIONS

67. The following expert opinions were expressed in relation to this matter:

- a. TH, MD, GT, KC (others abstaining) - the buffer for streams and wetlands in the application is a maximum of 5m with some having nothing. The minimum recommended is 10m.

UNCERTAINTIES

68. No uncertainties applying to this issue were identified.

IMPORTANCE

69. Riparian planting provides numerous ecological functions including filtering nutrients and runoff, reducing erosion, shading and contribution of organic matter to streams and buffering streams from adjoining land uses. Applying sufficient riparian planting contributes to achieving a good ecological outcome.

ISSUE 17 – Suitability of retention wetlands for offsetting

FACTS

70. The following facts are agreed in relation to this matter:

- a. The plans attached to this statement are the latest version of the scheme plan showing the layout of the wetlands to be removed and the retention wetlands to be created.

EXPERT OPINIONS

71. The following expert opinions were expressed in relation to this matter:

- a. VK stated his opinion that as a retention (and not a treatment) wetland, the only implication is that it has a different hydrological pattern than it

otherwise might i.e., it is wetter some of the time and it retains a low level of wetness all of the time (as opposed to drying out). Those hydrological patterns allow construction of an indigenous wetland type that didn't exist within the site previously. The design has recently been modified to "flatten" out the bottom and remove the deeper water so the wetlands are shallower and more uniform and therefore more enabling for permanent/persistent plant growth across the whole area whilst retaining the same volume with a much smaller open water body (if any).

- b. KG was not sure where the latest design drawings are available to reflect the "flattening out".
- c. MD considered that the latest design might address her concern about water being too deep to maintain vegetation. Her other concern was that not all of the area shown as being within the 10% AEP flood area will support wetland conditions as it doesn't flood that regularly. If water is not within 30-50cm of the ground level for most months of the year the areas will not be sufficiently wet for wetland creation.
- d. Having a plan that is overlaid with the retention wetlands would be helpful in understanding the persistence of created wetlands. VK has provided plans which are attached to this statement] and has advised that the stormwater engineers have advised that water level will be maintained. MD is not concerned about the areas within the 10% AEP extent that have already been delineated as wetlands. However, the attached plans show relatively large areas within this extent that are not currently wetland. She remains concerned that these areas may not be "wet enough" to provide functional areas of offset wetland. This concern is particularly relevant to Wetland E on the main stem of the Kakaho Stream. As the largest proposed retention wetland, Wetland E is expected to account for a substantial proportion of the 5,170 m² of wetland loss proposed to be offset through the retention wetlands.
- e. KG advised that current water monitoring bores were outside the current wet areas so they could be used for monitoring throughout construction and post development. That gives an indication of current water levels which would also assist in interpreting this matter.
- f. For Plimmerton Farms JB is aware that there was a condition of consent (condition 56 – Wetland Offsetting and Compensation Performance Targets in the Restored Wetland) that had a specified minimum water level in the constructed natural offset wetland at the bottom of the

catchment. Providing a similar condition in this project could assist in providing certainty around wetland creation.

- g. VK said that the intention is to create a “proper” wetland and the applicant can provide more technical information to confirm that this is the case.
- h. KC, TH noted that the D-G generally doesn’t accept that stormwater management wetlands are appropriate for providing an ecological offset. Contaminants are likely to make it to the retention wetlands, which makes it inappropriate for an ecological offset. This may be addressed via re-sizing or reconfiguration of the rain gardens to remove contaminants.
- i. In KG’s opinion, the rain gardens are appropriately sized and there is no intention of discharging any contaminants into the downstream areas. This is perhaps more of an engineering conversation.
- j. GT noted that these retention wetland areas would be covenanted and that may become an issue if future maintenance is required. That poses an issue if vegetation removal or other management is required within a covenanted area to deal with water retention.
- k. KG confirmed that the retention wetlands are designed to accommodate flood flows even at full vegetation coverage, so that maintenance shouldn’t be required and this matter should be addressed.
- l. VK advised that the intention is to have dense vegetation, so vegetation removal would be unacceptable in an offset wetland.
- m. In TH’s opinion this approach doesn’t meet the additionality criteria for offsetting. Offsets need to be actions that wouldn’t have been done otherwise, retention wetlands would have been required anyway. Furthermore, there is too much uncertainty about function and potential for contaminant load for the retention wetlands to be considered an offset.
- n. VK pointed out that retention ponds would be required, but they would look very different to what is proposed here and he is comfortable that it is an appropriate offset.

- o. MD, VK agreed that retention wetlands are suitable for offsetting of wetland loss at this location, noting that it would not be like for like, provided that:
 - i. open water areas can be vegetated;
 - ii. outside open water areas soils need to be saturated;
 - iii. any areas subject to stormwater maintenance need to be excluded;
 - iv. they must be subject to robust performance monitoring.
- p. TH and KC disagree with point o above because there are uncertainties about whether management of vegetation for storm water management would be required and also potential vegetation loss due to water level fluctuations. (KG, GT, JB, EJ and RF abstained). Furthermore, given the number and variety of waterway and wetland types across the property including seepages, streams and other wetland types, stormwater systems would not be sufficient to account for these various types.
- q. JB and KG consider that from a hydrological perspective it is about the ability to sustain a natural inland wetland at these locations. Their view is that wetland creation is possible subject to the provisos listed above.

UNCERTAINTIES

72. We agree that the following uncertainties apply to this issue:

- a. JB stated that the applicant has agreed to pay financial contribution for any contaminants being discharged (see page 46 of GWRC Comments on the substantive application). How that money gets spent in the catchment remains unknown. Unclear how that financial contribution works when the contaminants are flowing into an ecological offset wetland.
- b. Unresolved question: Upon being fully vegetated, which is an ecological requirement, can the retention wetland still perform its function without any maintenance?

IMPORTANCE

73. The retention wetlands provide the sole offset proffered for loss of wetlands and streams as a result of the proposal. Their suitability or not is determinative in assessing the ecological outcomes of the proposal.

ISSUE 18 – Delivery and maintenance of ecological outcomes with respect to wetland offsetting/risk that offsetting won't occur

74. This matter is addressed above and remains uncertain.

ISSUE 19 – Downstream effects fo the retention wetlands on stream ecology and offsite wetlands

75. This matter was not discussed.

ISSUE 20 – Effects of changes in hydrological regime

76. This matter was not discussed.

ISSUE 21 – Linking effects with staging and avoidance/minimisation/remediation/offsetting. Time lag between wetland and stream loss and implementation of offsetting

FACTS

77. No facts were identified in relation to this matter.

EXPERT OPINIONS

78. The expert opinions expressed in relation to this matter were as follows:

- a. All agreed that the application is not clear with respect to how staging integrates with the effects management e.g., the potential for Taupo Stream culvert offset to get implemented before upstream works are completed which results in sediment deposition downstream.
- b. VK considered that how the staging applies should be captured in the offset management plan and needs to align with the infrastructure plan to ensure that:
 - i. completed works are not affected by later effects management actions; and
 - ii. early effects management activities are not compromised by later development works.
- c. JB advised that sediment mobilisation risk would still be present following bulk earthworks, due to secondary earthworks relating to

residential developments. This risk may be present for potentially 15 years, as sought by the consent application, and puts offset areas at risk if they are not aligned with upstream stabilisation (i.e. completion of infrastructure and houses).

- d. GT, VK, MD agreed that in the absence of certainty, the application of higher Environmental Compensation Ratio (ECR) multipliers would be appropriate to reduce risk of non-delivery. VK has assumed an optimistic (minimum lag) approach to effects management, if there is a lag then offsetting would need to be increased to account for it.
- e. GT and MD have assumed a longer lag time than VK and that is reflected in their respective conclusions.

UNCERTAINTIES

79. We agree that the following uncertainties apply to this issue:

- a. GT, VK, JB, MD, TH, KC agreed (RF, EJ, KG abstained). In the absence of understanding when and where the effects will occur, it is not possible to specify when and where effects management must occur with any certainty. That uncertainty contributes to the risk of failure to achieve the ecological outcomes expected.

IMPORTANCE

80. Understanding the timing of effects and the proposed offsetting and any delay between the two important in assessing the overall level of effects and quantifying the offset required.

ISSUE 22 – Need for an integrated water quality/ecological/hydrological management plan

FACTS

81. No facts were identified in relation to this matter.

EXPERT OPINIONS

82. The following expert opinion was expressed in relation to this matter:

- a. All agreed that an integrated water quality/ecological/hydrological management plan that accommodated project staging effectively was required.

UNCERTAINTIES

83. No material uncertainties were identified in relation to this matter.

IMPORTANCE

84. Preparation of an integrated water quality/ecological/hydrological management plan that accommodates project staging will ensure effects are managed appropriately, including with respect to timing.

ISSUE 23 – Options to offset/mitigate effects on Taupo Stream in the same catchment

85. This matter is dealt with above.

ISSUE 24 – Vesting of the retention wetlands in Tiaki Wai

86. This matter is not strictly an ecological matter and is discussed above in relation to vegetation management and offsetting (which are ecological matters). However, MD notes that one of the principles of offsetting (Principle 6, Appendix 6, NPS-FM) is that offsets must match the timeframe of environmental loss, ensuring gains are not temporary. Therefore, matters such as funding and management are relevant considerations.

References

We have referred to the following documents in our discussions:

- Regarding the pasture exclusion, Ministry for the Environment (MFE). 2022. [Pasture exclusion assessment methodology](https://environment.govt.nz/publications/pasture-exclusion-assessment-methodology/). <https://environment.govt.nz/publications/pasture-exclusion-assessment-methodology/>. See page 9, Section 3.
- Regarding wetland types, the primary reference is Johnson, P., & Gerbeaux, P. (2004). Wetland Types in New Zealand. Department of Conservation, Wellington. This is relevant to “like for like” considerations.
- Explanatory note recently issued by EIANZ (2026). “Ecological Impact Assessment (EcIA). EIANZ Guidelines for use in New Zealand: terrestrial and freshwater ecosystems Interpretation of scale in assessment of ecological values and magnitude of ecological effects August 2026” Available at <https://www.eianz.org/resources/practice-guides/explanatory-note-on-ecological-impact-assessment-ecia-eianz-guidelines-for-use-in-new-zealand-terrestrial-and-freshwater-ecosystems>

- General guidance advice re nutrient removal by pasture wetlands – Dairy NZ (2018) - <https://www.dairynz.co.nz/media/0hfaf44l/wetlands-secret-ingredient-to-water-quality.pdf>
- Effectiveness of a Natural Headwater Wetland for Reducing Agricultural Nitrogen Loads – Pastoral catchment in Waikato (published in 2018) - <https://www.mdpi.com/2073-4441/10/3/287>
- Characterisation and potential optimisation of seepage wetlands for nitrate mitigation in New Zealand hill country: a thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Soil Science, Massey University, School of Agriculture and Environment, Palmerston North, New Zealand (published in 2023) - <https://mro.massey.ac.nz/items/21735edc-d8ea-48c1-9d31-28932e7c3dfe>
- Dunn, N.R.; Closs, G.P.; Crow, S.K.; David, B.O.; Goodman, J.M.; Griffiths, M.; Hicks, A.S.; Hickford, M.J.H.; Jack, D.C.; Kitson, J.C.; Ling, N.; Waters, J.M.; Wylie, M.J.; Hitchmough, R.A.; Makan, T. 2025: Conservation status of New Zealand freshwater fishes, 2023. New Zealand Threat Classification Series 46. Department of Conservation, Wellington. <https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs46.pdf>.
- Franklin, P.; Baker, C.; Gee, E.; Bowie, S.; Melchior, M.; Egan, E.; Aghazadegan, L.; Vodjansky, E. 2024: New Zealand Fish Passage Guidelines Version 2.0. https://niwa.co.nz/sites/default/files/2025-07/NZ%20Fish%20Passage%20Guidelines%20v4.5_July2025.pdf.
- Williams, P.A., Wiser, S., Clarkson, B., and Stanley, M.C. (2007), "New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework", New Zealand Journal of Ecology, 31(2), 119–128.
- Luo et al 2000- Soil biology and biochemistry vol 32, issue 4, April 2000.
- Rutherford et al 2009 – New Zealand Journal of Marine and Freshwater Research 2009, vol 43:1079-1094.
- Zaman, M., Nguyen M.L., Gold, A.J., Groffman, P.M., D. Q. Kellogg. D.Q., and R. J. Wilcock. 2008. Nitrous oxide generation, denitrification, and nitrate removal in a seepage wetland intercepting surface and subsurface flows from

a grazed dairy catchment. Australian Journal of Soil Research, 2008, 46, 565–577.

Signed



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Tayla Hooker



[Katie Collins 1 September 2026](#)

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