Appendix C – Dave West - Freshwater

Before the Fast-track Panel

Under: The Fast-track Approvals Act 2024

In the matter of: FT-0191-PRE - Beachlands South

Statement of advice

Dr David West

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12 October 2026

Department of Conservation
Te Papa Atawhai

Te Kāwanatanga o Aotearoa
New Zealand Government

Introduction

1. My name is Dr David William West.

Instruction

2. I am providing expert advice on behalf of DOC on the Beachlands South – Fast-track application in relation to effects on freshwater ecology.

Qualifications and experience

3. I have over 30 years' experience in freshwater ecology and have undertaken assessments, research and monitoring in streams, rivers, lakes and wetlands throughout New Zealand. I've worked at MAF Fisheries-NIWA researching and consulting on effects of contaminants, suspended sediment, pH and heat on freshwater fish and communities, the University of Saskatchewan where I led ecotoxicology research on freshwater communities downstream of mine discharges and Department of Conservation where I undertake assessment of effects of developments, freshwater biodiversity restoration and research. I have a MSc Hons in freshwater ecology and a PhD in freshwater ecotoxicology.

4. I have carried out research and evaluated assessments of effects of contaminants, suspended sediment, pH, metals, pulp mill effluent, sewage and elevated temperature on New Zealand's freshwater fish and invertebrates. I have also studied the effects of mine effluents on Canadian freshwater biodiversity, i.e. fish, invertebrates and periphyton.

5. When working for NIWA, I assessed the biodiversity of small headwater streams in Auckland that were typical of streams being piped and buried for developments such as this one. I have also assessed effects of culverting on fish passage for Auckland Alpurt motorway court proceedings. As a member of a residents' stream care group I assessed, advocated for and rehabilitated the tributaries and mainstem of a rural-urban stream impacted by housing developments on the Christchurch Port Hills and surrounding area.

6. I am employed as a Senior Science Advisor in the Freshwater Species team at the Department of Conservation. I have held this position for 19 years. I am a member of the New Zealand Freshwater Sciences Society.

Code of conduct

7. Whilst it is acknowledged this is not an Environment Court proceeding, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in the preparation of this advice. Unless I state otherwise, this assessment is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of advice and expert opinion

8. My expert advice will address the following matters:

    i. Adequacy of applicant's freshwater assessment of effects;

    ii. Freshwater biodiversity values at the site where I discussed the application, sought further detail on activities and mitigation, outlined freshwater effects I envisaged and adequacy of mitigation-compensation with applicant's consultants;

    iii. Adequacy of the proposed compensation-mitigation package for effects of activities on freshwater biodiversity; and

    iv. Suggestions as to how the freshwater assessment and compensation-mitigation package could be improved.

Sources

9. In preparing this advice, I undertook a site visit with the applicant's consultants on 6 October 2026.

10. I have also reviewed the applicant's technical information and assessment of effects as they pertain to freshwater ecology, including:

    i. 10055-008-1 - Beachlands Fast Track - Ecological Impact Assessme_120680

    ii. Attach 12 Ecology Impact Assessment

    iii. Attach 12B Appendices D - N.pdf

    iv. On site conditions and consultants for the applicants' explanations of the activity and compensation-mitigation package

Executive Summary

11. The applicant's assessment appears to underestimate freshwater ecological values due to incomplete surveys, inadequate consideration of ecological connectivity, and insufficient evaluation of hydrological effects. Further information and assessment will be required from the applicant in this respect.

12. Potential impacts on threatened fish species, including giant kōkopu and īnanga, remain uncertain.

13. The proposed compensation wetland is unlikely to fully offset the loss of streams, ponds, wetlands, and catchment connectivity, although a range of practical improvements could substantially strengthen the mitigation package. For example:

    (a) fixing barriers on waterways un-affected by development would go some way to compensating-mitigating for the loss of headwater streams, wetlands and ponds; and
    (b) increasing the extent of the "freshwater compensation wetland", for example by filling in the artificial drain that has been dug through the intertidal area from the tributary stream, would increase the freshwater values of that wetland.

Key Issues

14. I have identified the following key issues in relation to the information submitted by the applicant.

Adequacy of Assessment of Effects

15. Instream survey of streams most impacted (buried-piped) by activity are confined to SEV assessments. No instream sampling has been undertaken in the areas to be lost or in downstream waterways, so resident freshwater fauna that will be most impacted are not known

16. Giant kōkopu and īnanga eDNA detections[1] were not followed up with fish surveys. Therefore, the presence of these threatened species is not considered in effects or mitigation scenarios and irreversible loss of remnant populations of these species.

17. Freshwater surveys of streams, ponds and wetlands of the wider site are incomplete and confined to coastal freshwater surveys done for Auckland Council Significant Ecological Areas Overlay, Auckland Unitary Plan or early limited instream surveys by consultants for the applicant.

[1] Page 44, Attach 12 Ecology Impact Assessment

18. The stream, pond and wetland network are assessed separately and therefore benefits of connectivity between the various freshwater and coastal ecosystems have not been considered.

19. Hydrological impacts of upstream piping, diversion and infilling on the hydrology of lower waters has not been assessed. It is typical that such upstream works exacerbate storm damage to lower waterways due to higher discharges causing stream bank erosion and damage to instream fauna.

Freshwater biodiversity values at the site

20. The understanding of extant freshwater biodiversity is hindered by a lack of survey of parts of the affected and adjacent waterways. The lack of survey data makes conclusions about instream biodiversity values across the site difficult. My visual assessment (site visit, 6 October 2026) of the headwaters being impacted suggests they could contain unassessed freshwater biodiversity values e.g. fish and invertebrates. In my view, the permanence of flow and instream values are minimised or undervalued in the application for the reasons set out below. The impacted waterways are connected through water flows, even if piped in places. While barriers to fish passage were pointed out to me by the applicant's ecologist on my site visit, and documented in Watercourse 23 (Fig. 14 b), these may be passable by species such as eel and kokopu. The juveniles of these species can climb and pass by some barriers.

21. The project site and some of the waterways on the site have been altered, initially for farming and then for golf course purposes. This isn't uncommon in Auckland, however it is uncommon that the waterways have been retained and, in some cases enhanced, for golf course purposes. In contrast, many Auckland lowland streams have been completely modified and buried for housing and urban development. In long-modified catchments found in urban Auckland, "incidental" and artificially induced wetlands take on a role-value that natural wetlands once had and provide innate wetland benefits and downstream benefits to the streams that drain them. A reduction in wetlands and ponds on the site will reduce the hydrological connection and benefits to streams located downstream.

22. The surveys undertaken (i.e. Tonkin and Taylor 2022 b & d) did not survey large parts of the waterways impacted by this proposal. The lack of any fish survey in the northern draining stream, the headwaters (reaches upstream of WC23) of which will be buried and piped, is a major gap in the assessment of effects in my view, and the SEV estimates and proposed mitigation do not account for. There appears to be no SEV assessments of good stream habitat downstream of the reclaimed and impacted stream reaches, which probably retain giant kokopu (detected in 2022 eDNA but not caught) which are rare and Threatened Regionally Critical (Bloxham et al 2023) in Auckland.

23. Potential impacts of the application (loss and degradation of instream habitats) are exacerbated by the history of giant kokopu populations being impacted-lost in Auckland (Bloxham et al. 2023). Changes in downstream hydrology and sedimentation are possible even if best practice "oversized" treatment ponds[2] are installed. Īnanga were also detected in the 2022 Tonkin and Taylor eDNA sampling and there are likely to be īnanga spawning sites in coastal reaches of the streams draining the development that are susceptible to smothering by deposited sediment from upstream earthworks. There are accepted methods for locating and assessing īnanga spawning habitat i.e. National Īnanga Spawning Programme (NĪSP). If

[2] Page 53, Attachment 12 Ecology Impact Assessment

used, these could quickly identify spawning areas needing protection, enabling the use of appropriate mitigation to avoid those areas.

Adequacy of the proposed compensation-mitigation package

24. The proposed mitigation of freshwater stream, wetland and pond loss focuses solely on the "freshwater compensation wetland". My inspection of that wetland suggests that large parts of the wetland are coastal-saline influenced wetland, not freshwater wetland. Of the three compensation wetland planting zones identified, it seems likely that only the most inland North-eastern zone is or could be a freshwater wetland.

25. The compensation package does not replace the connectivity or stream values of lost stream, wetland and pond watershed. Small headwater and sometimes intermittent streams exert a critical influence on downstream portions of the waterway by retaining or transmitting sediment and nutrients; providing habitat and refuge for diverse aquatic and riparian species creating migration corridors and enabling connectivity at the whole watershed (Wohl 2017).

Freshwater assessment and compensation-mitigation package could be improved

26. As I shared with the applicant's ecologist and others on the 6 October site visit, there are a number of pragmatic ways the compensation-mitigation package could be improved. For example, there are barriers to fish migration throughout the activity's footprint, some of which have been identified. Fixing barriers on waterways un-affected by development would go some way to compensating-mitigating for the loss of headwater streams, wetlands and ponds. Filling gaps in fish surveys by electrofishing, netting or spotlighting or eDNA samples would maximise the benefit from barriers chosen to retrofit passage devices to by enabling passage for the fish species downstream.

27. Further mitigation actions, including increasing the extent of the "freshwater compensation wetland", would increase the freshwater values of that wetland. For example, the artificial drain that has been dug through the intertidal area from the tributary stream could be filled in, and would increase the extent of the wetland that is primarily freshwater influenced. adding the southern or true left bank area of the "North-eastern zone" to the extent of the freshwater compensation wetland would maximise any intervention to increase freshwater inundation-influence. These two wetland actions would improve freshwater benefits of the "freshwater compensation wetland" by increasing freshwater retention, improve conditions for freshwater wetland plants and animals and enable development of a functioning freshwater wetland.

Further Information & Next Steps

28. The further information sought from the applicant in relation to freshwater effects can be summarised as follows:

    i. Additional in-stream sampling and surveys is required in the areas to be lost and in downstream waterways

    ii. Fish surveys should be undertaken for Giant kōkopu and īnanga.

    iii. Additional surveys of streams, ponds and wetlands on the wider site are required to understand the full extent of potential effects[3]

[3]The surveys/stream sampling in i-iii can be undertaken at the same time

iv. The stream, pond and wetland network should be assessed in conjunction with each other in order to address effects and recognise benefits of connectivity between the ecosystems.

v. Hydrological impacts of upstream piping and change in water flows should be assessed.

vi. Further consideration of the compensation package should be considered, including fixing barriers on waterways unaffected by the development and consideration of increasing the extent of the 'freshwater compensation wetland'.

29. This information may also have consequential changes on draft conditions proposed by the applicant. I consider that further discussion is required between DOC and the applicant to consider the effects of the proposal and narrow any potential areas of disagreement.