

Delmore Fast-Track

04/05/2026 – Auckland Council Response

Annexure 25:

Freshwater Ecology

Delmore Fast Track Application

To: Auckland Council – Freshwater Ecology

From: Mark Delaney – Viridis; and Lachlan Van der Meij – McKenzie & Co

Date: 17 April 2026

Re: Freshwater Ecology Response Memorandum

1.0 Technical Specialist Memo – Freshwater Ecology

From: Antoinette Bootsma, Senior Freshwater Ecologist - Earth Streams and Trees team, Specialist Unit, Planning & Resource Consents Department

Qualifications & Relevant Experience: I hold the qualification of: Master of Science in Ecology and have 18 years of experience in freshwater ecological assessment. I have prepared expert evidence and technical assessments for resource consent applications, plan changes, notices of requirement for designation and fast-track applications and have appeared as an expert witness before consent authorities and the Environment Court on one occasion.

Preparation in Accordance with the Code of Conduct: I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses ([Code](#)), and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

Signature: 

Date: 23/04/2026

2.0 Original Specialist Review Memo

There was a discrepancy between the effects assessments relevant to culverts provided in the Viridis ecological assessment and WWLA hydrology assessment and plans provided in Appendix 33. Plans should be updated to clearly show culvert dimensions in relation to embeddedness, slope and modifications required to achieve fish passage, total length and erosion and scour protection. Culvert plans, effects assessments and consent triggers should be accurately integrated.

While an assessment of stream and wetland erosion response to culverts has been provided, Morphum's fluvial geomorphological assessment does not include consideration of an altered hydrograph resulting from an impermeable catchment. I note that erosion matters require an interdisciplinary approach. The effects of

erosion and stream migration and the consequent sediment release into the aquatic environment are directly related to potential loss of stream value. However, I note that assessment and mitigation offered for this potential effect require understanding of geotechnical, fluvial geomorphological stormwater and engineering matters that fall outside the scope of my expertise.

3.0 Updated Response to Applicant's Memo

Updated plans for culverts demonstrate which culverts require consent and how fish passage will be achieved. While small discrepancies between culvert plans and application documents still exist, I consider these to be minor. I note that further amendments to culvert design to resolve matters around their classification as dams are not considered in my memo.

The applicant's ecologist has provided comments on fish passage at culverts 7 and 8 with steep gradients. I accept that similarly steep gradients in the proposed new culverts will provide equal fish passage and allow species which inhabit those sections of stream to migrate upstream.

I note that culvert plans provide pre and post development flow at the inlet and outlet of each culvert and that only culverts 2 and 5 have a notably higher post development flow (0.6 and 0.5m/s flow increase respectively).

Stream erosion matters cross over stormwater, engineering and fluvial geomorphology considerations, which fall outside the scope of review of freshwater ecological effects. While I defer to these specialists for their review of overall stream erosion, I consider that, as it pertains to freshwater ecology, stream erosion has been satisfactorily addressed.

Based on the above, I consider all matter resolved, including conditions. However I specifically note that my assessment is based on culvert plans reviewed as part of this assessment and does not consider potential future culvert changes requiring further stormwater design consideration.

4.0 Conclusion

I consider that the application satisfactorily addresses the potential loss of stream and wetland value and extent that may result from the proposed development and I agree that conditions of consent are adequate to ensure that the envisaged outcome will be achieved.

Delmore Fast Track Application

1.1 Introduction

This memorandum responds to the Technical Specialist Memo prepared by Auckland Council (freshwater ecology) in relation to the above fast-track application (as lodged). This response addresses:

- Further information requests / technical queries; and
- Recommended amendments to consent conditions.

1.2 Response to Further Information Requests / Technical Comments

Information Request from Council on lodged material	Applicant Response	Council Specialist Response
The Viridis ecological assessment as well as WWLA hydrology assessment discuss culverts and their relation to potential stream and wetland erosion. These documents refer to culvert being embedded 25%, spanning 1.3 x the stream width and not exceeding 30m in length. Plans in Appendix 33 do not correspond in all instances	• Viridis: Whilst culverts 7 and 8 appear to have steep gradients, they match the natural stream gradient and therefore reflect current fish passage conditions, see figures 1 and 2 below. Fish found in the surveys were generally considered good climbers, especially for the species expected to be located in the upper catchments (eg. eels). These culverts are located relatively high up in the catchments. • McKenzie & Co: Culvert elevations / long-sections have been updated to be more accurate. Embedment is also shown in the plan views. A table outlining each culvert embedment is depicted in Attachment 1. • McKenzie & Co: In regard to Culvert 10, the plans have been updated to shown permanent wetland loss.	• I consider outstanding culvert matters satisfactorily addressed. I note that all temporary and permanent wetland loss have been adequately addressed in the wetland offset package. • I note that my assessment is based on culvert plans provided in this application.

with descriptions in the ecology and hydrology memos. This is further relevant to consent triggers for culverts that do not meet Permitted Activity triggers. I recommend that culvert plans should consider the following:

- It is not clear that all culverts will be able to provide fish passage since slopes are not clearly shown to be in line with requirements in the New Zealand Fish Passage Guidelines (2024), particularly culverts 7 and 8 appear to have steep gradients.
- Embeddedness of culverts is not clearly shown on drawings, some culverts, (including 5, 8, 9 and 11 appear to be under the ground elevation.
- Plans for culvert 10 (drawing #3725-1-4810) indicate that temporary wetland loss and subsequent reinstatement will be

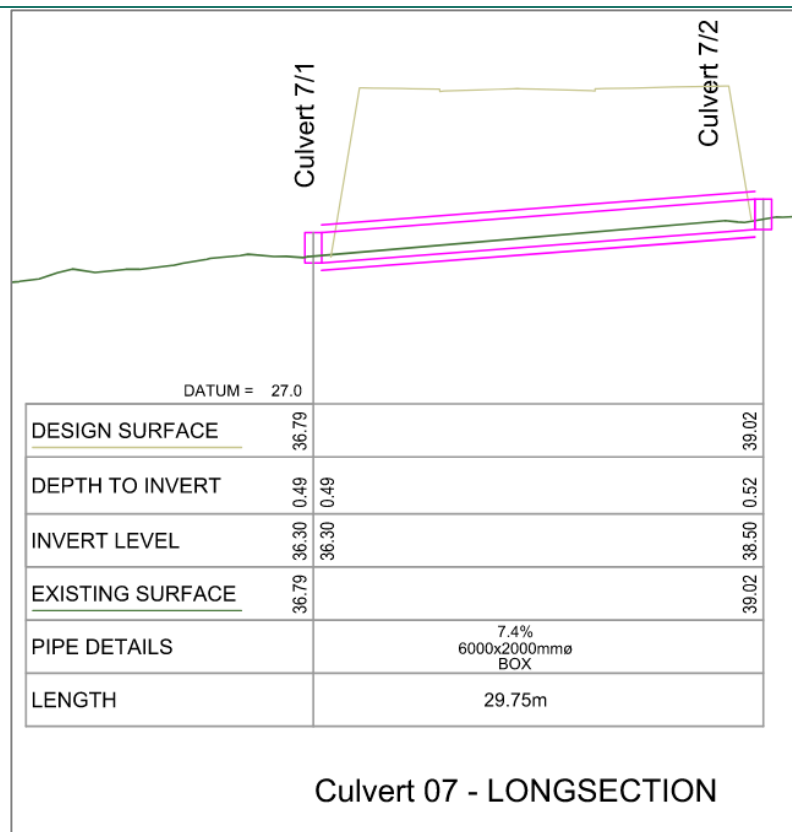


Figure 1: Culvert 7 long section

undertaken. However, since water will be directed into the culvert, I do not consider that wetland habitat adjacent to the culvert will be able to be reinstated.

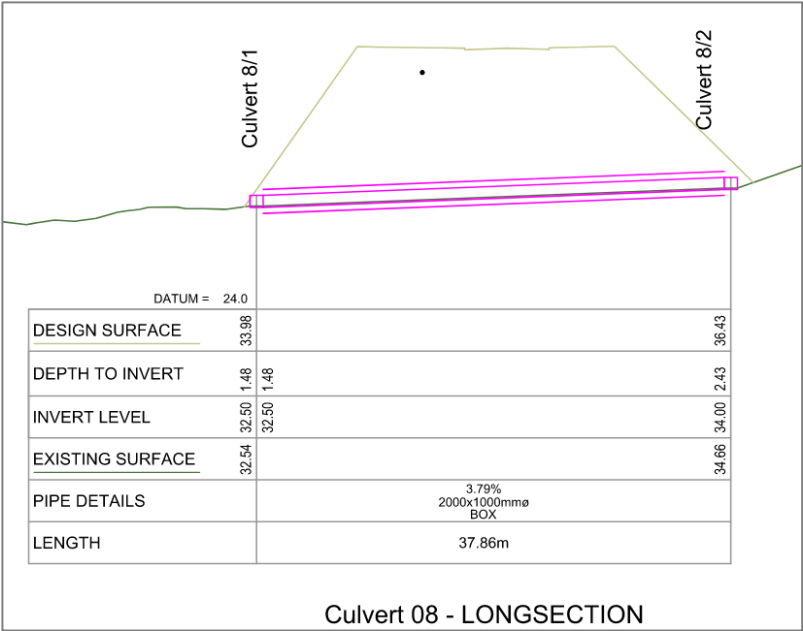


Figure 2: Culvert 8 long section

My concern that culverts will enable erosion of the wetlands is addressed in the lodged Geomorphic Risk Assessment prepared by Morphum which states that, “overall, the proposed culvert layouts are consistent with the geomorphic risk framework previously provided and do not introduce additional

A response to this query will be provided to Council as part of the geomorphology memorandum.

I note that culvert plans provided indicate pre and post development flow at the inlet and outlet of each culvert and that only culverts 2 and 5 have a notably higher post development flow (0.6 and 0.5m/s flow increase respectively). I accept the applicant’s ecologist’s response to fish passage concerns.

I note that stream erosion matters cross over stormwater, engineering and fluvial geomorphology considerations, which fall outside the scope of review of freshwater ecological effects. While I defer to these specialists for their review of overall stream erosion, I

geomorphic risks beyond those identified in the Geomorphic Risk Assessment". While I acknowledge that my concern regarding stream erosion resulting from culverts has been addressed, the statement above does not include consideration of changes to the post development hydrograph in terms of duration and frequency of erosive flows resulting from an impervious catchment.		consider that, as it pertains to freshwater ecology, stream erosion has been satisfactorily addressed.
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1.3 Response to Recommended / Amended Conditions

Condition Request from Council on lodged documents (Appendix 44)	Applicant Response	Council Specialist Response
1. Prior to the commencement of earthworks on-site, the consent holder must prepare and submit to Council for certification, a final Wetland Offset Plan. The Wetland Offset Plan must be prepared with input from a suitably qualified ecologist, hydrologist and stormwater engineer. The Wetland Offset Plan must be in general	It is understood that this condition has been resolved and Council is agreeable to a 5 year duration.	I am in agreement with a 5 year monitoring timeframe.

accordance with the following documents approved under Condition 1: (a) The Landscape Plans prepared by Greenwood Associates, dated December 2025; and (b) The report prepared by WWLA, titled “Wetland and Culvert Assessment”, dated December 2025; and (c) The report prepared by Viridis, titled “Delmore Fast Track Application – Ecological Impact Assessment”, dated December 2025. The Wetland Offset Plan must include the following minimum details: (d) Calculated accountancy for unavoidable wetland reclamation in accordance with the AUP(OP) Appendix 8; (e) The location of the area(s) proposed for wetland creation; (f) Works to ensure a wetland hydrology is created and maintained; (g) Planting schedule, including species, density and grade; (h) Legal protection (e.g., consent notice); (i) A five ten-year maintenance and monitoring plan to ensure the wetland(s) and associated planting is successfully established; and (j) Measures to be undertaken if the wetland(s) or planting(s) is not successful.		
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Advice note: The Wetland Offset Plan may be submitted in stages or sub-stages to align with the development staging. Commentary: A five year monitoring plan is sufficient to ensure establishment of plants in new wetlands. However, to ensure that new wetland hydrology functions to account for the permanent loss of wetlands resulting from this application, a ten year monitoring period is required to ensure that newly created wetlands will persist.		
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Attachment 1: Culvert Embedment

Proposed Culvert	Culvert Parameters		
	Span (mm)	Rise (mm)	Embedment (mm)
Culvert 1	4000	2000	350
Culvert 2 (circular)	1950		650
Culvert 3	5000	4000	350
Culvert 4	5000	4000	350
Culvert 5	4000	1000	350
Culvert 6	4000	2000	350
Culvert 7	6000	2000	350
Culvert 8	2000	1000	600
Culvert 9 (circular)	900		150
Culvert 10 (circular)	2100		700
Culvert 11	4000	1700	350
Culvert 12 (circular)	1500	900	400