Delmore Fast-Track

25/06/2025 – Auckland Council Response

Annexure 18:

Surface Water

Nick Hazard

Asset Owner / Specialist Response (BUN60444768 – WAT60444834)

From: Nick Hazard, Consultant Hydrogeologist, Water Allocation

Date: 24 June 2025

Do you support the application, subject to recommended conditions? **Yes**

Documents Reviewed

(1) Vineways Delmore Fast-Track AEE_17_02 Final, B&A, dated 17 February 2025
(2) Appendix 04, Ecological Impact Assessment, Viridis Limited, 13 February 2025
(3) Appendix 06, Stormwater Mangement Plan
(4) Appendix 08, Geotechnical Report
(5) Appendix 12, Stormwater Report
(6) Appendix 22, Delmore Fast Track Proposed conditions, B&A
(7) Delmore AC Surface Water June 19 Further Response, 12 June 2025
(8) Memo: Delmore – Methodology for Culvert Works within a Stream, McKenzie & Co, dated 12 June 2025

Overall Summary

The Applicant is seeking consent to temporarily divert stream flow during the construction of multiple permanent stream crossings which require consent under discretionary rule E7.4.1 (A13). It is understood that the diversions will comprise temporary channels excavated adjacent to the stream channel, diverting the entire flow for a period ranging from a few days to around 30 days. All of these crossings are located in the immediate vicinity of existing culvert crossings that are mostly planned to be removed and replaced by new culverts in slightly different locations.

The consent application does not specifically address effects of these short-term diversions or provide any methodology. The AEE, section 11.3.5 states "*The Streamworks Management Plan (SMP) will detail the Erosion and Sediment Control (ESC) plan measures proposed, how contaminants will be managed, how fish passage will be maintained, and the methodology for diverting flows and for the construction of structures. This will ensure the works are managed in accordance with best practice.*"

A further information request was provided by email on 16 May 2025. Key information requested was for an example of the proposed diversion methodology at one of the culverts and for a condition providing some construction standards in line with Regulation 70 of the NESFW and Permitted Activity standards provided in E7.6.1.2 of the Auckland Unitary Plan (Operative in Part). An initial response was provided by the applicant on 12 June 2025 followed by a McKenzie & Co memo outlining methodology for the diversion.

The site was visited on Tuesday 27 May 2025 and Culvert sites 4, 5 and 8 to 11 were visited. Sites downstream of culverts 6 and 7 were also visited. Each site was photographed and relevant aspects recorded. The site locations are presented in Figure 1 attached.

Reasons for consent – Surface Water Diversion

Auckland Unitary Plan (Operative in Part) (AUP(OP))

The proposed works do not comply with E7.4.1 (A13) for the following reasons:

- The works will not take into account flood events as the construction is temporary for a very limited time (E7.6.1.2 (2))

- The activity must not lower water levels in any wetland, except for wetlands designed and used for stormwater management by a network utility (E7.6.1.2 (4)).

Accordingly, consent is required under AUP(OP) as a **Discretionary Activity**.

Resource Management (National Environmental Standards for Freshwater) Regulations 2020

Regulation 45C (4) **Restricted discretionary activities** of the National Environmental Standard for Freshwater 2020 (NES-F) regarding the proposed diversion of water within a 100 m setback from a natural inland wetland, is based on whether:

a) the activity is for the purpose of constructing urban development; **and**

b) there is a hydrological connection between the taking, use, damming, or diversion and the wetland; **and**

c) the taking, use, damming, or diversion will change, or is likely to change, the water level range or hydrological function of the wetland.

The proposed works may or may not meet Regulation 70 of the NESFW which provide the conditions for Permitted Activities in relation to the placement, use, alteration, extension, or reconstruction of a culvert in, on, over, or under the bed of any river or connected area. The methodology has not been provided to date. Provision of fish passage during temporary diversion for the construction of the culvert (replacement of existing) is not necessarily required under regulation 70 2(a).

Assessment of Surface Water Diversions Effect on Streams

Discussion on site with Mr James Kitchen, McKenzie & Co, indicated the planned diversions would involve a cut channel with the intake zone protected by a weir plate controlling upstream water levels. The weir plate would be set at a level that did not reduce existing low flow levels at the time of construction below those planned for the permanent constructed culvert. Mr Kitchen stated they would expect to choose dry summer weather windows to construct the diversions. I was advised that the diversions are expected to be only for a matter of days for some diversions but a month or more for sites such as for the Culvert 4 installation.

The provision of an example methodology, *Delmore – Methodology for Culvert Works within a Stream* provided by McKenzie & Co, confirms the planned construction and the methodologies will protect the existing flow regime and ecology. The memo states that the temporary diversions will be compliant with the methodologies presented in the Auckland Council document '*Erosion and Sediment Control Guide for Land Disturbing Activities for the Auckland Region, June 2016"*.

Culverts 1,2, 5 to 7, 10, 12 and 13 are all located in relatively small catchments with ill-defined or very small stream channels at the proposed diversion sites. I expect that in peak summer conditions most of these sites will have negligible stream flow i.e. maybe represented as seepages only. There is not expected to be any regional groundwater contribution to base flow at these sites. It is expected that any temporary diversion can be constructed to maintain upstream water levels and avoid adverse effects on any wetlands other than those planned to be removed by proposed permanent culvert crossings. Weir plates may be required at the diversion intake to control water levels and to protect the stream bed and upstream wetlands.

Culverts 8 and 9 are located in slightly larger catchments and do have defined stream beds. Culvert 8 is expected to be positioned upstream of the existing culvert which is partially blocked. This blockage has created a damming effect, siltation and the development of wetland on the upstream side of the crossing. It is assumed this crossing was originally formed as a small stock drinking water dam as the existing culvert is placed high up on the embankment. Downstream of the existing culvert, the terrain drops steeply over 3m of vertical elevation. Drawing 3725-0-4808 indicates that the new culvert intake position is up to 4.0m below the existing culvert intake which will remove the current damming effect and require significant excavation to install a diversion drain. However if the methodology presented in the McKenzie & Co memo is followed then the new culvert intake position should match the existing culvert intake position avoiding adverse effects.

Culverts 3, 4, and 11 are sited on streams which are expected to retain significant flow during the construction period as these sites are located where base flow contribution from regional groundwater is expected. These streams all have defined channels, and the diversions are unlikely to affect upstream and downstream flows or any wetlands. The gradients in the streams at the proposed crossings are low and unlikely to require weir plates to control flow levels. The AEE does not associate these culverts with any wetland losses. The main issue is providing sufficient temporary channel cross sectional area to avoid any significant increase in flow velocity and resultant scouring of the channel or outflow zone. The McKenzie and Co memo addresses this issue satisfactorily.

The Culvert 8 position with respect to the upstream and downstream invert levels is comparable to that at the location of Culvert 9. These two temporary diversions are expected to have a significant elevation difference between the current and proposed inlet. The McKenzie & Co memo specifically addresses the methodology proposed for the surface water diversion for Culvert 9. The methods outlined in the memo to avoid adverse effects are acceptable and for this reason should be referenced in the conditions attached to any consent granted.

Some loss of wetland is proposed as outlined in 6.2.2 of the Ecological Assessment (Viridis, Appendix 4)) and on that basis, it is assumed the temporary diversion will be constructed to

protect any wetlands beyond the envelope of effects (*area of proposed wetland removal*) expected from the construction of the permanent culverts.

The site visit combined with a desk top review and the McKenzie & Co Memo inform my view that the works can be carried out without a change to the existing water levels present, or to a change to the hydrological function of the wetlands upstream or downstream of the works.

All other matters raised in my 16 May 2025 email have been addressed.

Conclusions

Based on the information provided to date by the Applicant, the inspection of the sites and discussion with the applicant representatives, I consider that the proposed temporary diversions could be constructed so that they will not adversely affect upstream wetlands and water levels beyond what is proposed for the permanent culvert crossings. While no specific effects assessment is provided in the AEE, the specific methodology for the temporary surface water diversion activity is well documented in the subsequent Mckenzie & Co memo.

Recommendation

The assessment in this memo does not identify any reasons to withhold consent for the temporary diversion and could be granted consent subject to provision of adequate methodology and recommended conditions, for the reason that it is considered that the adverse effects on the environment likely will be less than minor.

Comments on Conditions Proposed by the Applicant

The applicant proposes a Streamworks Management Plan (SWMP) where methodologies for the temporary diversions are proposed to be detailed. I agree with the proposed conditions presented by the Applicant in respect of the proposed temporary surface water diversion but consider that additional standards should form part of the conditions to guide the preparation of methodology for the temporary surface water diversions in the SWCP.

Recommended Additional Conditions:

Additional Condition proposed as follows:-

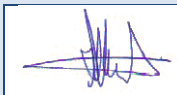
a) The methodology for installation of the short term surface water diversions must be in general accordance with the memorandum prepared by McKenzie & Co titled “Delmore – Methodology for Culvert Works within Stream” dated 12 June 2025.

b) The temporary diversion cut must be designed to provide stable stream bed conditions to avoid scouring and erosion both upstream and downstream of the diversion and any other instability of any land or water body.

REVIEW

Technical memo prepared by:

Nick Hazard

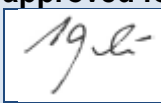


Consultant Hydrogeologist, Coastal & Water Allocation, Specialist Unit, Planning and Resource Consents

Date: 24 June 2025

Technical memo reviewed and approved for release by:

Marija Jukic



Team Leader, Coastal & Water Allocation, Specialist Unit, Planning and Resource Consents

Date: 24 June 2025

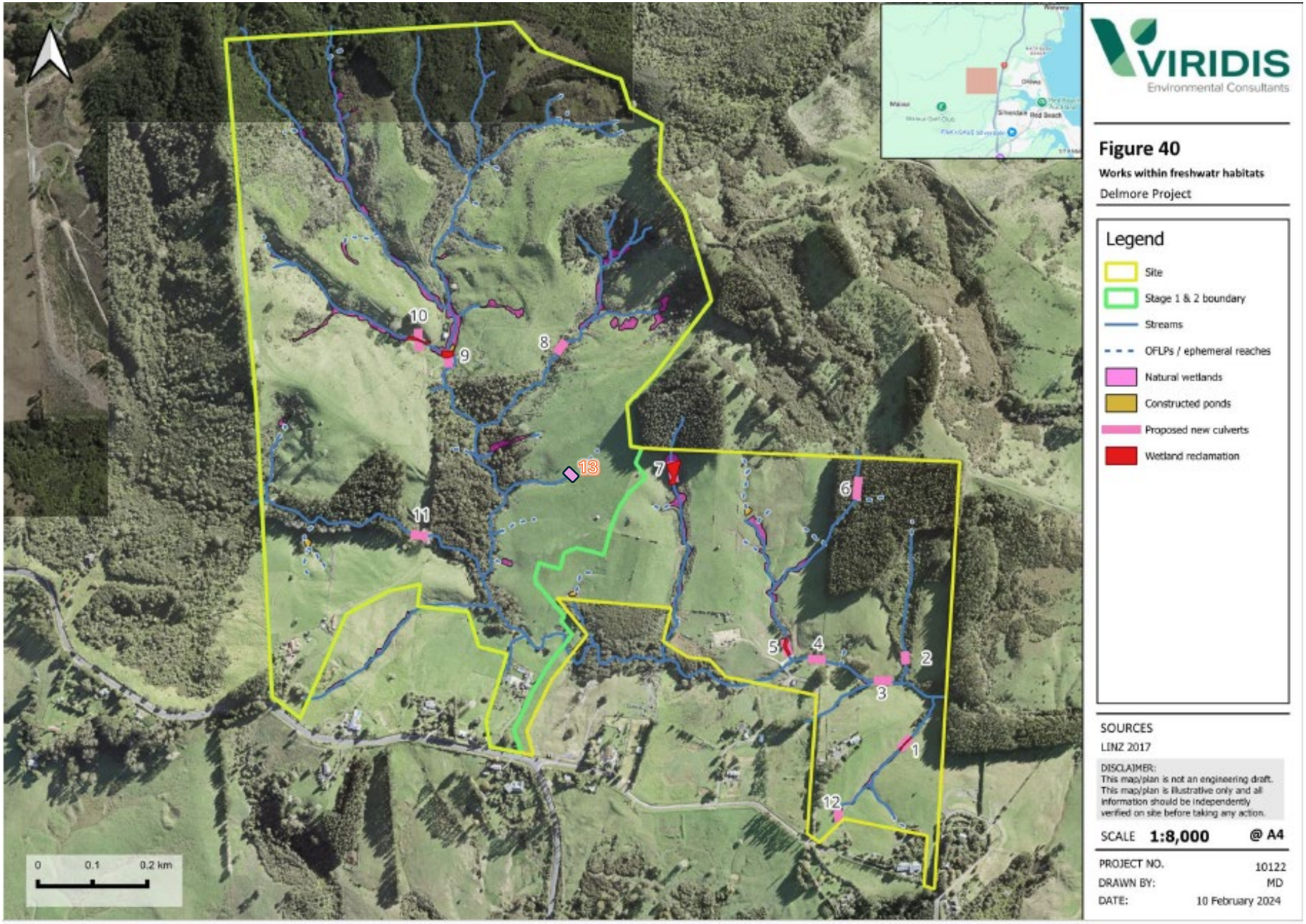


Figure 1: Location of Proposed Temporary Surface Water Diversions, numbered 1 to 12 but with culvert 13 added