

To: David Allen, Martin Neale

From: Andrew Rossaak(AC), Amber McEwan (DOC)

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Response to Minute 8, item 3(f) from the panel workshop held on the 3rd September 2026.

The below description and table illustrate our thoughts regarding the quantum of additional offset that we consider necessary to appropriately manage the effects from the stream loss. We retain the view that the loss is a permanent effect, and requires the residual adverse effects to be addressed (i.e. through biodiversity offsetting) – rather than the applicant's position that this is a temporary effect to be remedied only.

The Hunua quarry proposal includes the loss of stream length and associated biodiversity functions and values because the constructed realignment will be shorter than the reclaimed reach.

The Hunua quarry is unusual compared to many realignment proposals because it includes staged livening (an experimental approach with high uncertainty regarding outcomes, but with the potential (and the aim) to meaningfully remedy loss of value). We have considered this to reduce the practical difference, in terms of remedy-vs offset, in relation to time lag for value equivalence to be reached in this situation.

In many situations, it may be possible to construct a channel that – given time – is sufficiently similar in terms of value (ecological) to mean that all loss of value can be considered temporary. In this case however, the inevitable differences in physical (instream and riparian) characteristics between the impact reach and constructed reach mean that the most reasonable approach is to consider that there is an unavoidable loss of value that is permanent (Attached SEV spreadsheet and accompanying assumptions and ECR tables).

Parameters:

- For Hunua Quarry Mangapū Tributary (Trib 1) scenario: Realignment associated with the reclamation of 1,200 m of existing stream length. The new constructed diversion channel will be 570 m in length (what has been termed here as 'loss with replacement'), so there is a 630 m length shortfall ('loss without replacement') if the proposal had sought to achieve a no-net-loss of stream length.
- Application concludes that a stream area of 1,770 m² is required to address the reclamation (see EclA B12.4.5b - section 10.7.1 and subsequent responses. We note, however, that Appendix 15 has the offset stream area required to be 1,320 m² and that this difference is attributed to differences in stream widths of the stream extent and value that will be lost/affected - meaning that 628 m² will be created/remedied in a constructed diversion stream, leaving 1,142 m² residual effect/loss to be offset and compensated for, elsewhere (not considered in this memo). It is recommended the panel satisfy themselves of this through the updated Appendix 15 and particularly if the estimated widths of 1.1m or the updated widths of 1.4m is used.

- Based on the 1,770 m² impact area, the below table illustrates the differences between an 'offsetting approach' and a 'mitigation approach':

'Mitigation approach' by applicant	'Offsetting approach'	Clarify differences
1. Temporary loss of 627 m² (570 m x 1.1 m) <i>extent</i> remedied by creating new channel. 2. In the Hunua case, proposed remedy for temporary loss of 627 m² <i>current value</i>¹ associated with time lag is assumed to be wholly addressed through staged livening.	1. Permanent loss of 628 m² <i>extent</i> offset by creating new channel 2. Temporary loss of 628m² <i>potential value</i>² remedied (in the Hunua case) by staged livening process. Residual effect from time lag (i.e. loss of <i>value</i> persists for x amount of time) EITHER: Offset by x m² (estimated based on expected lag time/uncertainty/environmental context specific to case) multiplied by 1.5 or higher ECR of stream restoration (this requirement is less in the Hunua case) OR (in the Hunua case we suggest): 3. Permanent loss of 748.89m² of ecological <i>value</i>³ which is represented by the SEV-ECR derived calculation (see attached spreadsheets) of estimated differences between the old and new channels. The ECR =2.19 and indicates a shortfall in mitigation of 680 m of similar stream or 750 m² (total offset value of 1,376m² – 628 m² of the proposed diversion).	Different approach for the 'loss with replacement' portion (i.e. the realignment) The loss of potential and actual ecological value in the constructed channel is not realised in the applicant's approach.

¹ In mitigation or remedy we consider the outcome must be no net loss of potential. In this case the impact stream is considered to be close to its potential under the SEV assessment.

² 'potential value'; is used here for consistency in description of approach. In this case, current value of the impact stream has been taken as equal to potential value by applicant and this is accepted by AC and DOC.

³ In this case, due to physical conditions, the new channel will not be able to provide equivalent value to the old one. This means that – of the 'loss with replacement' component – some of the value loss will be temporary and some will be permanent. Assuming staged livening is highly effective, then this could be considered to wholly remedy temporary loss of value (covered in this Point 2), but there is still permanent loss of value that requires offsetting (covered in Point 3 below)

	We also consider that formalising the implementation and monitoring of staged livening process in conditions (and providing robust indicators/monitoring criteria outcomes that will be of ecological benefit) would be a suitable approach and fit in with an adaptive management approach. We also consider the SEV is appropriate tool for assessment as this is how the other stream offsets in this application have been assessed. Further, we see no reason the SEV would not be an appropriate monitoring tool (as evidenced in the application, table 11).	
Residual permanent loss of 693 m ² <u>extent</u> to be compensated for by barrier remediation (specifics?)	Permanent loss of 693 m ² <i>extent</i> (preferably offset/compensated for by daylighting or suitable compensation)	Same approach for the 'loss without replacement' portion - i.e. in situations where constructed channel is shorter than reclaimed channel
Residual permanent loss of 693 ² <u>value</u> to be offset with 4.13 ECR therefore: 2863 m ² of stream restoration equivalent required.	Permanent loss of 693 m ² <i>value</i> offset with 4.13 ECR therefore 2,863 m ² of stream restoration equivalent required	Same approach for the 'loss without replacement' portion – i.e. in situations where constructed channel is shorter than reclaimed channel