

1st December 2025

Attn: Sunfield Expert Panel
c/o Environmental Protection Agency (EPA)

Ecology Response

The below table provides a response to the memorandum of counsel for Auckland Council provided on 26th November regarding ecological information.

Issue	Council Memo	Applicants Ecologist Response
1	It remains unclear where the enhancement stream length is. There is no plan that shows where 'Swale 13', one of the stream reaches to be enhanced, is located. Nor is there a plan that would show the full extent of the 'Main channel'.	The plans used for the evaluation are the detailed engineering drawings included in the Sunfield FTAA application.
2	There is no information that enables a peer reviewer to determine what the length or width of the stream enhancements are.	Please refer to the detailed engineering drawings.
3	It is not clear if, or how, the length of the stream that is to be culverted, has been considered. The culvert length could be considered as an impact (if it is on an existing watercourse), or the culvert length taken away the stream length that is available to be enhanced (on the proposed enhancement channels.	The culvert length compared to stream length pre- and post-development shows no net loss. Additionally, the diversion channels will be an increase in width, providing a greater overall area of stream bed extent.
4	It remains unclear if the stream enhancements (on the Main channel and Swale 13) achieve no net loss of ecological <i>values</i> , or to what level the effect of the impacts on the ecological values are addressed.	The existing stream channels are highly modified and straightened reaches with highly incised banks and essentially act as farm drains. The new stream channels will contain connectivity to the floodplain, increase aquatic habitat availability and quality, contain indigenous riparian and wetland planting. There is a clear no-net-loss of ecological values
5	It would have been anticipated the excel calculator used for the modelling of the SEV	Calculator now provided.

	values be provided for review, as is standard practice. The excel calculator was not provided.	NOTE: we typically don't provide these unless asked. Other FTAA applications have not requested this when stream reclamation and offset is proposed (these have proceeded to draft decision for approval)
6	The results have been presented as the aggregated 'SEVs Functions'. Most functions are comprised of multiple variables which are not reported individually in the response and, therefore, cannot be reviewed or commented on.	Please refer to the SEV Calculator
7	<p>Without having reviewed the excel calculator I note concerns with the following:</p> <p>a) If the substrate has been 'largely kept consistent' (as reported in page 5, para 2 of the SEV Assessment), how the DOP function increases by such a large degree. The DOP function is comprised of the Vsurf and the Vripfilt variables (and this level of detail has not been provided for review).</p> <p>b) 'largely kept consistent', is inconsistent with the second part of that sentence that reads: <i>however an increase in woody debris and small gravels, which can be placed during the construction of the channel, has been increased.</i> And later in that same paragraph: <i>Whilst the stream channels will have a gravel lining</i> This creates doubt as to what the substrate of the bed and banks would be, which is used as a variable in calculating several of the SEV functions.</p> <p>c) Vlining is one of three variables used to calculate the Natural Flow Regime (NFR) function and one of two variables used to calculate Connection to Groundwater (CGW) function. The SEV Assessment states that the author has not considered the gravel as an artificial permeable lining, as it won't restrict riparian connectivity. However note that under the SEV methodology 'gravels' range in size</p>	<p>A lot of SEV functions are interconnected - DOP increases due to increases in filtration function.</p> <p>A high proportion of fine sediments, consistent with SEVi-C with minor improvements included fine substrates (~70%) with the remainder gravels or woody debris.</p> <p>Regarding the substrate stability during storms – this has been assessed in the Geomorphic Risk Assessment provided as part of the Sunfield FTAA application.</p> <p>Noting naturally fine gravelled streams don't lose all their substrates during storm events. Substrate sorting will likely occur to create a more natural stream bed.</p>

	from 2 – 64 mm. At that size of diameter rock, I would be concerned if/how the gravels would be able to withstand and remain in place during flood flows. There are no engineering plans for the stream enhancements that would enable this detail to be peer-reviewed.	
8	The benefit of providing the excel calculator is that it allows for a sensitivity analysis to see if any of these comments meaningful impact on the overall SEV score.	Noted.
9	I further note that the placement of woody debris and small gravels would potentially require consent under rule E3.4.1(A5), if considered a substance or E3.4.1(A28) if considered a structure.	These consent triggers generally relate to existing streams and adding substances for habitat enhancement (restricted discretionary activity) and structures associated with enhancements (restricted discretionary activity). Technically, this work would be undertaken prior to the stream going 'online', recognising it is a newly constructed stream. It is also noted that the assessments have factored this matter in, noting it is a non-complying activity overall.
10	In addition to the above, I also note concern with the commentary surrounding the SEV methodology:	
a)	It is not clear what assumptions have been applied to the potential value of impact stream (SEVi-P).	Assumptions table for the potential scores was included within the appendices, however largely relates to the planting of 10m riparian yard, and fencing from stock access. No stream enhancements, such as the inclusion of rocks or woody debris applied unless naturally occurring from organic matter inputs from the riparian margins
b)	The subject site is zoned Future Urban and Rural – Mixed Rural, both rural zones, and under the Auckland Unitary Plan provisions riparian yard in these zones is 20 m wide. Therefore, best practice enhancement, which should have been considered in the impact sites potential value (SEVi-P) would be for this entire	Whilst a 20m riparian yard requirement applies to rural zones, a 10m wide riparian yard has been applied which is the requirement in urban zones recognising the specific nature of the Sunfield masterplanned proposal, noting the

	<p>20 m width to be restored with native vegetation. Note that the applicant has applied this rationale to the mitigation (SEVm-P) scenario, but not to the impact site. This has the effect of increasing the SEVm-P relative to the SEVi-P score which masks the level of potential ecological value lost and correspondingly over-reports on the relative to the level of gain in the enhancement scenario.</p> <p>The riparian planting width is used as an input in several SEV variables.</p>	<p>riparian margins proposed extend past 10m.</p>
c)	<p>It is not clear what impacted streams are covered by what SEV scenario.</p>	<p>Figure 1 in the report shows the SEV and associated impact streams. Only two stream reaches are present on site which will be impacted through diversion. The SEV's undertaken where representative of the wider reaches of the impact streams.</p>
d)	<p>In the SEV Assessment, under the section 'stream habitat values' para. 3, states:</p> <p><i>An ECR of 0.61 was calculated for SEV1 and 0.94 for SEV2.</i></p> <p>However, Table 2 shows the ECR for SEV1 is 0.94 and for SEV2 the ECR 1.00.</p> <p>Having undertaken my own ECR calculations on the applicant's numbers, I concur with the figures used in Table 2. I am not sure where the figures the SEV Assessment states have come from.</p>	<p>This is a Typo. 1.00 is the correct ECR ratio for SEV2, as referred throughout the text.</p>
e)	<p>Notwithstanding my agreement with the ECR reported in table 2, in section 6.5.5 (page 55) of Auckland Council Technical Report 2011/009:</p> <p><i>If the calculation produces an ECR value of less than 1, then the ECR defaults to 1.</i></p>	<p>Noted.</p>
f)	<p>The statement regarding replacing SEVi-C scores with SEVi-P scores is also potentially misleading as this is not how the ECR is calculated when using the SEV methodology. The ECR calculation is given in the methodology as:</p>	<p>To clarify, the replacement of SEVi-P (potential scores) with SEVi-C (current scores) is intended to show the uplift of ecological values and overall net gain compared to what is currently present.</p>

	$ECR = [(SEVi-P - SEVi-I)/(SEVm-P - SEVm-C)] \times 1.5$ <p>Note: there is no input for SEVi-C</p>	
11	<p>The fundamental concern regarding how these ecological enhancements will work alongside the stormwater management functions remains unclear. Specifically, if they need to be 'mucked out' periodically as part of routine maintenance activities and therefore be subject to on-going disturbance that limits the potential to reach the reported level of enhancement.</p>	<p>There is no proposal for any of the conveyance channels to be 'mucked out', this is seen as not being required given the swales and channels are not part of the treatment train.</p>

Yours faithfully



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Bioresearches