

BEFORE THE HEARING PANEL

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of an application for a
proposed Private Plan Change (Private Plan
Change 28) by CCKV Maitai Dev Co LP and
Bayview Nelson Limited to the Nelson City
Council associated with the rezoning of
approximately 287-hectares of land located
within Kaka Valley, along Botanical Hill and
Malvern Hill on land at 7 Ralphine Way,
Maitai Valley and Bayview Road as detailed
within the application.

S42A SUMMARY REPORT TO THE COMMISSIONERS

**MR GREG HILL (CHAIR), MS SHEENA TEPANIA, MS GILLIAN WRATT, AND MR NIGEL
MARK-BROWN**

**SECTION 42A SUMMARY REPORT OF DR TANYA BLAKELY – ECOLOGY SPECIALIST,
BOFFA MISKELL LIMITED, ON BEHALF OF THE NELSON CITY COUNCIL**

21st July 2022

Introduction

1. I have prepared this summary statement as an update for the commissioners based on the evidence I have heard within this PPC28 hearing to date, and to note the key outstanding matters of concern with respect to terrestrial and freshwater ecology.
2. This statement should be read in association with:
 - Appendix M - S42A Report of Dr Tanya Blakely dated 19th May 2022
 - Appendix E - S42A Addendum Report of Dr Tanya Blakely dated 24th June 2022
3. My recommendations from my original section 42A report and addendum remain valid, except as discussed below.

Protection, enhancement and restoration of indigenous vegetation and habitats

4. I understand from Dr Robertson's and Mr Farrant's evidence that the intention the 'Revegetation Overlay in Rural Zones' and the 'Residential Green Overlay' is to achieve significant ecological enhancement and protection of indigenous biodiversity, and to improve water quality.
5. While I consider the addition of these overlays could result in the above positive ecological outcomes, I am still unclear of the purpose of the overlays, and on the objectives, policies and rules that relate to these.
6. I have heard from Dr Robertson during this Hearing that he considers the revegetation overlays will connect and restore existing ecological values; and recreate and strengthen ecological corridors and linkages across Kākā Hill, including to significant natural areas, to Kākā Hill tributary, Atawhai / Maitahi Ridgeline, and adjacent coastal slopes.
7. I still consider that ecologically meaningful biodiversity corridors should be included on the Structure Plan.
8. Provision X.16 requires a "Vegetation and Fauna Management Plan" to be prepared and submitted with any application for subdivision and development within the Schedule X area.

9. While this is a commendable inclusion, I remain unclear on the objectives, purpose and content of these management plans. I have previously provided some guidance in on the matters that I believe the management plan should include. Ms Sweetman has discussed the mechanics further in her S42A addendum.
10. I am also of the view that a whole of PPC28 area Vegetation and Fauna Management Plan should be prepared at the Structure Plan stage, to provide a site-wide approach, and to identify and address cumulative effects.
11. I remain of the view that there should also be inclusion of a bespoke rule on vegetation clearance within the Residential and Rural zones, given the intended purpose of these overlays appear to be to provide for the protection, enhancement and restoration of indigenous vegetation and habitats for fauna.

Inclusion of waterways on the Structure Plan

12. It is still my position that all of Kākā Stream, including its headwater tributaries, should be shown on the Structure Plan to set the spatial framework, and to identify the ecological constraints and opportunities. This is also relevant because I understand that intermittent and perennial waterways would meet the definition of 'river' under the RMA and the NPS-FM and would be subject to the requirement 3.24 of the NPS-FM, where the loss of river extent and values is generally avoided. This information forms an important part of the Structure Plan, depicting the constraints and opportunities within the PPC28 site.

Realignment of lower Kākā Stream

13. I remain strongly of the view that Kākā Stream does not need to be realigned to achieve ecological enhancement.
14. I have heard Dr Robertson's, Mr Markham's and Mr Farrant's views on the benefits of realigning the lower reach of Kākā Stream.
15. I agree with Mr Markham regarding the benefits to freshwater ecology from stock exclusion, reducing pugging and faecal inputs, reducing stream erosion, and increased shading, filtering and buffering from a planted riparian margin. However, these benefits

could be achieved within its current alignment. Some of these benefits could also be achieved without the realignment and PPC28 proceeding.

16. I remain unclear on the evidence that the applicant's experts use to determine that the alignment of the lower Kākā Stream has been previously altered and that the proposed realignment would seek to return Kākā Stream to its former, historic alignment.
17. In my experience, reconstructed streams can require a strongly engineered approach, for example to ensure water permanence channels may need to be lined, or rock rip rap included for scour and erosion protection. These can result in poor ecological outcomes.
18. Enhancement *in situ* is often the best ecological route as the existing connection with groundwater and the hyporheic zone will be maintained, as well as other ecological features and function (e.g., natural stream bed). The current information provided does not give me the certainty of the 10-fold improvement that Mr Markham referred to.
19. As stated by Mr Farrant, there will be some immediate shading for the realigned stream. However, this will be from the hill and existing trees, many of which are exotic, deciduous trees. The seasonal leaf inputs from deciduous trees can have adverse effects on water and habitat quality.
20. In my opinion, shading of the existing stream channel could also be achieved relatively quickly through densely planting the edges of the stream with fast-growing native grasses. These grasses could be considered somewhat sacrificial plantings, to be replaced by more diverse plantings including slower-growing species (e.g., indigenous shrubs and trees).
21. I do not consider it appropriate the Structure Plan and its provisions rely on and provide policy support for the realignment of Kaka Stream on the premise that this is the only, or best, option to achieve ecological enhancement.

Riparian width and esplanade reserve

22. I still consider an addition to the existing X.7 provision, to provide a requirement for a buffer width of at least 20 m on each side of the stream, where natural topography and geological features allow. In my view, this will be important for ecological function of the stream and to minimise effects of the surrounding land use on the ecology of Kākā Stream.

23. Mr Markham considers that the inclusion of this additional requirement may result in perverse outcomes for design and urban development. As an ecologist, it is my role to consider ecological outcomes, and I will refer to Council's other experts on matters regarding landscape, stormwater treatment and urban development constraints and opportunities. As I understand, there would be an avenue to seek to reduce a 20 m minimum width on each side of a stream through a discretionary activity consent (as there would be for a 40m width).
24. My recommendation is founded on best available knowledge on riparian buffer widths and function and research by some of New Zealand's leading freshwater ecologists / scientists.
25. I agree with Mr Markham's statement that riparian plantings provide filtering functions for the stream, intercepting stormwater and overland flows and filtering out sediments and other contaminants.
26. As a rule of thumb, the greater the width, the more benefits to stream ecosystem health, with buffers of 20 m found to be more likely to support self-sustaining indigenous vegetation with fewer maintenance requirements than narrower buffers. While buffers of less than 10 m width are unlikely to protect ecological function, or in-stream fauna.

Appropriateness of location of stormwater management devices

27. I have listened to the matters raised by Mr Farrant and Mr Markham. I continue to have concerns about the appropriateness of locating stormwater management devices within the Riparian Margin, and on-line attenuation basins.
28. As I understand it, the construction of an on-line attenuation basin would require construction of a dam with a culvert to convey Kākā Stream at baseflows.
29. I defer to Ms Purton and Mr Wilson on matters regarding engineering and design elements, and stormwater management, such as treatment devices and attenuation basins.
30. I will provide comment on construction and operational effects on ecology, including on fish passage.

31. I have extensive experience overseeing construction activities when working in and adjacent to waterways. Construction activities can have significant effects on freshwater ecology, such as sediment discharge, sediment deposition, smothering of habitats, and disturbance, injury and mortality of freshwater fauna.
32. I also have extensive experience in assessing and designing fish passage, and am very familiar with the needs of New Zealand's freshwater fishes and challenges when using structures in waterways.
33. While I consider it may be possible to design and construct on-line attenuation basins while providing for fish passage, this also comes with risk and the matter is complex. Culvert slope, length, size, water velocity, embeddedness and inclusion of natural substrates, and any requirements for downstream scour protection all critical components of providing for fish passage for the life of a structure.
34. In addition, it is essential to know what species are present, or could be present when designing structures to provide for fish passage. I query whether adequate surveys have been carried out to understand the existing in-stream fauna of Kākā Stream catchment to inform this.
35. I consider this matter needs adequate and further consideration.
36. I also consider that the location of on-line attenuation basins and other engineered stormwater treatment devices within the Riparian Margin may conflict with the intention for ecological enhancement of the stream, particularly with respect to provision of a well-shaded stream channel.
37. Mr Markham notes that deep rooted vegetation will not be able to be planted on engineered slopes. This may limit the ability to plant trees and other tall stature vegetation, which will provide shading, bank stability, and food and habitat resources for both in-stream and terrestrial fauna.

General effects on freshwater ecology

38. I have discussed in my S42A report and addendum the general effects of urbanisation, including potential adverse effects of sediment discharge and sedimentation, increased impervious surfaces, inputs of contaminants, flashy flows and loss of flow permanence.
39. I have heard Ms Steven's concerns regarding the short catchment at the south end of Malvern Hills that is hydrologically separate flowing out through Branford Park on the west side of Olive Hill.
40. I very briefly viewed the lower reach of this waterway on 20 July 2022, after approximately 20 mm of rainfall in the preceding two days. I noted that it is a small stream, with a defined bed in places with cobble and fine substrates. I also noted the presence of caddisfly pupae and other macroinvertebrates.
41. Mr Markham has not considered this waterway in his freshwater ecology assessment, which I consider to be a gap that needs to be addressed given that it will not be subject to stormwater treatment, so may receive untreated stormwater discharges and could be subject to changed (reduced) flow permanence as a result of development in the upper reaches.

DATED this 21st day of July 2022



Dr Tanya Blakely