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Memorandum

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Attention:	Gina Sweetman; cc Leigh Marshall, Paul Fisher, Jo Martin
Company:	c/- Nelson City Council
Date:	24 June 2022
From:	Tanya Blakely
Message Ref:	PPC28 S42A Report Ecology Addendum
Project No:	BM200903

Introduction

1. My full name is Dr Tanya Jillaine Blakely. I have been engaged by the Nelson City Council (Council) on ecological matters arising from the applicant's evidence (received on 15 June 2022) relating to Maitahi Bayview Private Plan Change 28 (PPC28) to the Nelson Resource Management Plan (NMRP).

2. My qualifications and experience are as identified in my Section 42A – Ecology memorandum (s42A Report) to Ms Gina Sweetman dated 19 May 2022.

3. I have read and will continue to comply with the Code of Conduct for Expert Witnesses as set out in the Environment Court's Practice Note 2014.

4. I have prepared this addendum to my s42A Report to summarise the findings of my additional technical review in relation to terrestrial and freshwater ecology matters and should be read in conjunction with my s42A Report. This addendum only addresses any further matters that have been raised after considering the following components of the applicant's evidence:

    - Evidence of Dr Ben Robertson – Terrestrial Ecology
    - Evidence of Mr Joshua Markham – Freshwater Ecology
    - Evidence of Mr Stu Farrant – Water Sensitive Design
    - Revised Stormwater Management Report (V2) attached to Mr Maurice Mills' evidence
    - Revised Structure Plan and Graphic Attachments attached to Mr Tony Milne's evidence
    - Updated Schedule X (V2,15 June 2022) attached to Mr Mark Lile's evidence.

5. I have discussed PPC28 Applicant's Experts' Evidence with Council's Planning, Landscape, Visual and Natural Character, Urban Design, Erosion and Sediment Control, Stormwater, Water Quality, and Water Sensitive Design S42A experts.

6. My addendum considers the following matters in relation to terrestrial and freshwater ecology, while I refer to advice from the Council's experts noted above:

    a. Amendments to the Structure Plan include a secondary road along Kākā Valley

    b. Additional cross sections through Kākā Stream

    c. New Vegetation Overlays to provide for protection, enhancement and restoration of indigenous vegetation and habitats

    d. Inclusion of Kākā Stream and tributaries of the Structure Plan

    e. Requirements for the realignment of lower Kākā Stream

    f. Appropriateness of location of stormwater management devices.

7. As a note, I wish to record that my first memorandum incorrectly referenced Dr. Roger Young as being an expert for Save the Maitai. This is incorrect. He is an expert for Friends of the Maitai.

Secondary road along Kākā Valley

8. The applicant's evidence includes updates to the PPC28 and amendments to the Structure Plan itself including (but not limited to) further information on road alignments, removal of the Higher Density Small Holdings zoning and reduction in the overall Residential zoning with subsequent increased Rural zoning, and addition of a 'Vegetation Overlay Plan' with 'Residential Green Overlay' in the Residential Zone and 'Revegetation Overlay in Rural Zone'.

9. The revised Structure Plan locates a secondary road along Kākā Valley on the true left of Kākā Stream. The addition of this secondary road connection up Kākā Valley has been discussed by the Council's Urban Design expert Mr Graeme McIndoe, where he states that the indicative secondary road along Kākā Stream has insufficient adjacency to the stream and provides recommendations to address this.

10. As stated in my s42A Report, from an ecological perspective, a buffer width of at least 20 m of riparian margin on each side of the river should be provided, where natural topography and geological features allow. In addition, consideration should be given to avoid impervious surfaces (such as shared paths) and other structures within 5 m of Kākā Stream, to ensure a minimum of 5-10 m (on each side) of riparian margin planted with ecologically suitable indigenous vegetation is achieved along the length of Kākā Stream. It will be important to ensure that the Open Space corridor is sufficiently wide on the true left side to provide for these ecological recommendations as well as addresses any Urban Design concerns.

Additional cross sections through Kākā Stream

11. In addition to paragraph 10 above, the cross sections attached to Mr Milne's evidence have provided some further understanding of the widths of 'Riparian Margins' that can be located within the 'Open Space Zone' corridor. These cross sections sometimes show the 'Open Space Zone' as a width greater than 40 m, while the 'Riparian Margin' is always shown as 40 m. I consider a width of 40 m for Riparian Margin suitable, if it is a minimum of 20 m either side of the stream where the natural topography and

geology allows, is planted with ecologically suitable indigenous vegetation that provides the necessary ecological functions for the stream (as discussed in my s42A Report), and avoids impervious surfaces and other structures adjacent to the stream. However, I am unclear about how the rule X.7 would provide for this and think there is a disconnect between this rule and the cross sections attached to Mr Milne's evidence. I consider additional information is still required to ensure how a minimum width of 20 m riparian margin (each side) can be provided where the natural topography and geological features allow.

Protection, enhancement and restoration of indigenous vegetation and habitats

12. Reduction of the overall Residential zoning with subsequent increased Rural zoning has responded to submissions and expert conferencing and the acknowledgement of the need to avoid the areas of most extensive indigenous vegetation on Kākā Hill. As noted in Ben Robertson's evidence (paragraph 34), this is where kanuka forest and shrubland and matagouri shrubland are a dominant feature ranging from High to Very High ecological value. The addition of the 'Revegetation Overlay in Rural Zone' encompasses much of this existing vegetation on Kākā Hill.

13. I understand from the evidence of Dr Robertson and Mr Farrant that the intention of the 'Revegetation Overlay in Rural Zone' and the 'Residential Green Overlay' is to achieve significant ecological enhancement and protection of indigenous biodiversity, and to improve water quality within the freshwater receiving environments by reducing erosion and sediment and nutrient inputs and improving riparian margin stability.

14. While I consider the addition of these overlays over existing vegetation, and revegetation of areas within the residential areas, could result in the above positive ecological outcomes, I am unclear what the objectives, policies and rules are that relate to these overlays.

15. The new provision X.16 requires a "Vegetation and Fauna Management Plan" shall be prepared and submitted within any application for subdivision or development within Schedule X, and that this management plan shall address the 'Residential Green Overlay' and the 'Revegetation Overlay in Rural Zone'. However, the objectives, purpose and content of these management plans are also unclear and should be clearly stated in X.16.

16. Further, this new provision X.16 requires a Vegetation and Fauna Management Plan to be prepared for each subdivision or development, but there is no requirement to follow a whole of Site Vegetation and Fauna Management Plan. A whole of site approach (via preparation of an overarching Vegetation and Fauna Management Plan at the Structure Plan level), with subsequent subdivision or development specific management plans that are in accordance with the Structure Plan-level management plan would provide a site-wide approach, identify and address cumulative effects.

17. Matters that the Vegetation and Fauna Management Plans should consider, include (but not limited to) the overarching purpose and objectives of the management plan, a summary of ecological surveys and ecological values assessment to inform the proposed vegetation and fauna management, identification of areas to avoid, protect, or enhance and methods to enable this, details of vegetation clearance protocols and management, revegetation objectives and protocols including plant species lists, methods for fauna

management including to meet any requirements of the Wildlife Act Authority, methods for plant and animal pest control and on-going management.

18. I understand from the Council's Planning expert, Ms Sweetman, that the requirement of X.16 only applies to Rules X.2 and X.3, neither of which apply to the Rural zone where the 'Revegetation Overlay in Rural Zone' is located; and only X.3, which relates to subdivision in the residential zone, would include consideration of the 'Residential Green Overlay'.

19. While the vegetation clearance rules of the Nelson Resource Management Plan (NRMP) (RUr.25 and REr.59) afford protection for 'Indigenous Forest' species, the rules are extremely permissive for regenerating and remnant indigenous vegetation that do not meet the "forest" criteria. There should be consideration of inclusion of a bespoke rule(s) on vegetation clearance with the Residential and Rural zones within the Structure Plan area if the intended purpose of the Residential Green Overlay, the Revegetation Overlay in Rural Zone, and the Vegetation and Fauna Management Plan provisions is to provide for the protection, enhancement and restoration of indigenous vegetation and habitats for fauna (as suggested in Dr Robertson's and Mr Farrant's evidence).

Inclusion of Kākā Stream and tributaries of the Structure Plan

20. As recommended in my s42A Report, the ecological values within the Structure Plan area, including wetlands, perennial and intermittent waterways and overland flow paths, should be added to the Structure Plan, Landscape Overlay or an additional Ecology Overlay. It was recommended that this information would form part of the 'blue-green' layer to provide a framework to guide opportunities for ecologically appropriate biodiversity and ecological connections and areas of constraint, to be avoided or those presenting opportunity to enhance.

21. The updated Structure Plan includes one additional section of waterway / headwater tributary from Kākā Hill and joining Kākā Stream in the upper reach. However, information provided on Figures 1 & 2 of the Revised Stormwater Management Report (V2) shows many more headwater tributaries within the Structure Plan area that feed into, and form part of, Kākā Stream. This level of detail is highly relevant and I would expect to see this on the Structure Plan, rather than snipping and excluding streams and waterways for the mapped information.

22. The level of detail that I consider necessary is still absent from the Structure Plan and / or associated overlays.

Realignment of lower Kākā Stream

23. The evidence of Mr Markham discusses the ecological benefits of the proposed realignment of the lower reach of Kākā Stream as part of the PPC28. This proposed realignment is identified on the updated Structure Plan and explicitly provided for in Schedule X (and specifically X.9). The Ecological Outcomes and Freshwater 'principles' of X.9 includes this provision under the proviso that this realignment of the lower portion of Kākā Stream "*provides for improved ecological outcomes, provides for more efficient urban form and demonstrates adherence with best practice channel design guidelines*."

24. I make the following points in relation to this.

25. My view, as noted in the Terrestrial and Freshwater Ecology Joint Witness Statement (13 May 2022) and agreed by Dr Young (Friends of the Maitai freshwater expert), is that the realignment of Kākā Stream is not necessary to achieve ecological enhancement; ecological enhancement could be achieved with or without realignment. While the lower reach is modified by the surrounding land use, ecological enhancement could be achieved keeping it in its current location.

26. I am unclear on the evidence that the applicant's experts use to determine that the alignment of the lower reach of Kākā Stream has been previously altered, and that the proposed realignment intended by the PPC28 would result in reinstatement of the flow through a historic floodplain (Paragraph 42, Dr Robertson) and ensure ecological enhancement of the waterway.

27. Although I do not consider realignment necessary to achieve ecological enhancement of the waterway, this is not to say that ecological enhancement could not also be achieved by a realignment. However, this would very much depend on this realignment being done correctly to provide for an ecologically functioning stream channel, a stream corridor of sufficient width to provide for an appropriate channel design and ecologically functioning riparian margin.

28. I note the potential realignment of Kākā Stream would require resource consent(s), which would need a detailed ecological impact assessment in accordance with the National Policy Statement for Freshwater Management 2020 (NPS-FM), addressing the fundamental concept of Te Mana o te Wai and ensuring the effects management hierarchy has been appropriately followed[1].

29. Given the above, I do not think it is appropriate that the Structure Plan and its provisions require the realignment of Kākā Stream on the premise that this is the only, or best, option to achieve ecological enhancement. Instead, realignment should be explored as an option for realignment, but equally so should the alternative of enhancement of the stream in its current alignment needs to be considered at the plan change stage.

30. Lastly, Schedule X.9 and the evidence of Mr Markham refer to the need to demonstrate adherence with best practice channel design guidelines. I believe that this may refer to a set of guidelines[2] that, to my knowledge, are yet to be fully drafted and are not publicly available. I am uncertain about the suitability of a (even if implicit) reliance on a set of yet to be developed guidelines for inclusion in the rules of X.9.

<u>Appropriateness of location of stormwater management devices</u>

31. In my s42A Report, I noted that stormwater treatment devices to treat stormwater from the development were likely to be included within the 40 m Open Space corridor along Kākā Stream. After reviewing the Revised Stormwater Management Report (V2) attached to Mr Mills' evidence, I note that the several Attenuation Areas are shown located within Kākā Stream (shown on Figures 2 & 3 of the revised Stormwater Management Report). Council's Water Sensitive Design expert, Mr David Wilson has

[1] The effects management hierarchy is defined in 3.21 of the NPS-FM.
[2] The National Stream Design Guideline is a proposal by Tonkin and Taylor and collaborators and the guidelines are yet to be fully developed.

reviewed this and presented his findings from a water sensitive design perspective. From an ecological perspective, placement of attenuation areas within the waterway could have significant adverse effects on freshwater ecology values if not appropriately designed, installed and managed.

32. As Mr Wilson states, detention structures should only be located within the stream corridor if a best practical options process has been followed; locating detention with the stream corridor should be avoided if possible.

33. Where these devices are needed to be located within the stream the construction and operation will need to be well managed to meet the requirements of the NPS-FM (Te Mana o te Wai, and the effects management hierarchy) and that any structures (e.g., culverts, outflow pipes) meet the fish passage regulations of the National Environmental Standards of Freshwater.

Conclusions

34. I consider the updated Structure Plan, with the additional overlays, may provide protection and enhancement opportunities of existing terrestrial ecological values within the Structure Plan area, pending inclusion of sufficient objectives, policies and rules that relate to the vegetation overlays.

35. The purpose and content of the Vegetation and Fauna Management Plan needs to be included in X.16 to ensure that the development of these plans meet the overarching objective for the Structure Plan area. I have provided some initial thoughts on the types of information that should be included in the Vegetation and Fauna Management Plan in Paragraph 17. This is not an exhaustive list.

36. Further, an overarching Vegetation and Fauna Management Plan at the Structure Plan level should be prepared and subsequent Vegetation and Fauna Management Plans developed for future subdivision or development should be in accordance with this overarching management plan.

37. The cross sections attached to Mr Milne's evidence have provided some further understanding of the widths of riparian margins that can be located within the Open Space corridor, and that the 'Open Space Zone' sometimes exceeds the minimum total width of 40 m, while the 'Riparian Margin' is always shown as 40 m. Additional information is still required to ensure how a minimum width of 20 m Riparian Margin (each side), which is planted with indigenous vegetation, can be provided where the natural topography and geological features allow.

38. Additional ecological features, such as wetlands, perennial and intermittent streams, and overland flow paths should be included on the Structure Plan or an associated overlay. This information will inform additional areas of constraints or enhancement opportunities, and biological and ecological connections.

39. I do not think it is appropriate that the Structure Plan and its provisions require the realignment of Kākā Stream on the premise that this is the only, or best, option to achieve ecological enhancement. Instead, realignment should be explored as an option for realignment, but equally so should the alternative of enhancement of the stream in its current alignment needs to be considered at the plan change stage.

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Date: 23 June 2022

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