

My name is Anne Kolless, I present this submission on behalf of Serge Crottaz who is not in the country at the moment.

Serge has a long experience of the sea, tidal movements, and weather forecasting being a sailor and having sailed from Europe to Aotearoa New Zealand twice on his personal sailing boats as well as sailing regularly in the Nelson area.

I agree there is a housing need to address but I disagree with the PPC 28 as I believe the area to be developed is unsuitable for this development.

- 1) Point 20 of the provided document: the following example, extracted from the Nelson Tasman Future Development illustrates my point: *'Greenfield site [N-106] are identified in Maitai Valley (both Maitahi/Bayview (PPC28) and Orchard Flats) recognizing their close proximity to Nelson City Centre and ability to provide for a new community of approximately 1,100 homes at the north-eastern edge of the city'*.
- 2) Point 23: This point shows that an increase amount of stormwater coming from the housing proposal will need to be going somewhere. My experience described above confirms that a combination of a king tide, intense low pressure system and the north easterly storm wind associate with post-tropical depressions and the shallow water of Tasman Bay will create an accumulation of water or storm surge in the lower part of the Maitai River and the flood water from the above storm will have nowhere to go. In other word 'a perfect storm' that will inundate the flood plain and the Mill Street area where my house is situated.

Conclusion

I do not believe the PPC 28 will resolve the issue of housing in a safe and ecological way particularly in term of the flooding risks resulting from the above circumstances.

For the above reasons, and many others presented at length to this panel by the significant majority of submitters, I seek that the Private Plan Change be rejected on its entirety by the Nelson City Council.

Thank you to the hearing panel for taking the time to hear and consider my submission.

This document summarized the memorandum below.

Memorandum

To: Gina Sweetman
From: Kate Purton

Date: 28 May 2022
Our Ref: 4293304-67661593-3658

Copy:

Subject: Private Plan Change 28 Maitahi Bayview – Stormwater and Flood Risk

INTRODUCTION:

1. My full name is Katherine Michelle Purton. I am employed as a Technical Director – Civil Engineering at Beca Ltd (**Beca**).

2. I have prepared this memorandum on behalf of the Nelson City Council (**Council**) in respect of technical related matters arising from the submissions and further submissions on the Private Plan Change 28 request (PPC28) to the Nelson Resource Management Plan (NRMP).

NATURE OF THE REQUEST

20. For the Kaka Hill Tributary catchment, there is the possibility of future development occurring within the existing overland flow paths and the waterway flow path which have not been modelled and therefore not been mapped

23. A higher density residential zone is proposed for the Maitai River floodplain on the valley floor. The applicant has advised that this would require filling within the floodplain when development occurs. Excavation within the floodplain to provide additional flood storage to offset that lost due filling (offset storage) was also proposed in the request, however it is understood that this is no longer proposed and instead the applicant intends to limit the filling within the floodplain so that offset storage is not required.

From my experience, working for councils as an employee and at Beca for a wide range of clients (both councils and applicants) around New Zealand:

- a. It is common practice for councils to require that master planning and catchment or stormwater management planning (including hydraulic modelling) are undertaken at plan change stage.
- b. Without a stormwater management plan is difficult to provide for a continuous integrated system through multiple subdivisions, such as a waterway realignment through more than one subdivisions and treatment and/or attenuation facilities which also receive runoff from the upstream subdivision.
- c. It is not uncommon for progressive development of multiple subdivisions with no overarching stormwater management plan to lead to problems with stormwater and flood risk management through the development stage, and to leave councils with residual issues to address once vested.
- d. Examples of these issues include:
 - i. Providing insufficient primary and/or secondary flow capacity and attenuation storage for stormwater runoff from upstream development.
 - ii. Neglecting to assess the combined effects of multiple subdivisions or stages of development on flows, velocities and flood risk downstream.
- e. Such issues can arise despite requirements in the council's design guidelines and despite the best intentions from all parties.

STORMWATER MANAGEMENT PLANS

38. In my opinion a stormwater management plan should be provided for the future development for each side of the ridge, at Plan Change stage.

39. In general terms, a stormwater management plan should include the following elements. While some of these relate to other disciplines, and are therefore outside the immediate scope of my evidence and my area of expertise, they need to be addressed as part of a multi-disciplinary spatially integrated stormwater management plan:

b. A description and indicative conceptual plans of the future development and land use intensification within the catchment, including anticipated yield

43. The proposed stormwater management system for the south side of the ridge/Kaka Hill Tributary catchment, including proposed: development arrangement; treatment method and sizing; stream erosion mitigation; attenuation storage location(s); form, size(s) and footprint(s); pre- and post-development peak flows; discharge points; filling and offset storage within the Maitai River floodplain; and cumulative effects downstream.

50. Assessment of the existing Maitai River bank erosion and migration of the Maitai River bank in the loop north of Maitai Road, the effects of the proposed PPC and future development and any proposed mitigation on this erosion and migration, and how the reserve/esplanade width has been established.

ADDITIONAL INFORMATION REQUIRED

41. More specifically for this site, in my opinion the following additional conceptual information is required at Plan Change stage in order to:

a. Demonstrate the feasibility of the proposed stormwater and flood risk management system and its ability to mitigate the effects of the future development.

REASONS FOR THE LEVEL OF INFORMATION REQUIRED

52. As noted earlier, the stormwater and flood risk issues for this site are complex and inter-related. PPC28 proposes rezoning of the site in a manner that would provide for development upstream of existing residential development; development on steep hill slopes with geotechnical hazards; development in the Kaka Hill Tributary catchment and including adjacent to the Kaka Hill Tributary which has not been modelled (so flood extents are not known); realignment of the Kaka Hill Tributary; and development in the Maitai River catchment where there is existing flooding and erosion, including future development within the floodplain.

53. The form of the site with steep slopes on both sides of the ridge, geotechnical hazards, existing waterways and flow paths, and much of the valley floor being within the Maitai River floodplain, makes it challenging to find appropriate locations for stormwater treatment and attenuation facilities. On the steep slopes it could be difficult to find suitable areas to fit stormwater facilities due to the topographical constraints and geotechnical/land stability risks (which could be exacerbated by stormwater storage). On the valley floor it could be difficult to find locations downstream of development but outside the floodplain. Also for stormwater facilities on the valley floor, if the land is prone to liquefaction, there may need to be a buffer around the facility to mitigate lateral spreading risk to the sites.