

**BEFORE A HEARING PANEL  
CONSTITUTED BY NELSON CITY COUNCIL**

*IN THE MATTER*

of an application by **CCKV Maitahi Development Co LP** and **Bayview Nelson Limited** for a change to the Nelson Resource Management Plan (Plan Change 28)

*IN THE MATTER*

of Part 5 and Schedule 1 of the Resource Management Act 1991

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**STATEMENT OF REBUTTAL EVIDENCE OF STUART FARRANT**

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Applicants' Consultant:

Landmark Lile Limited  
PO Box 343  
Nelson 7040  
Attention: Mark Lile  
Email: [mark@landmarklile.co.nz](mailto:mark@landmarklile.co.nz)  
Tel: 027 244 3388

Counsel acting:

**John Maassen**  
— BARRISTER —

✉ [john@johnmaassen.com](mailto:john@johnmaassen.com)  
🌐 [johnmaassen.com](http://johnmaassen.com)  
☎ 04 914 1050  
📠 04 473 3179

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### **Name, qualifications, experience, and code of contact**

- [1] My full name is Stuart James Edgar Farrant. My qualifications and experience are set out in my statement of evidence. I confirm I continue to abide by the Code of Conduct for Expert Witnesses.

### **Reference documents**

- [2] I prepared a Statement of Evidence with respect to water sensitive design and stormwater management as part of the PPC28 application. I have since been provided with and read the following documents:

- (a) Section 42a addendum evidence by Ms. Gina Sweetman titled “*Section 42a Addendum Report of Gina Sweetman – Planning, Sweetman Planning Services, on Behalf of Nelson City Council*” (dated 29 June 2022).
- (b) Section 42a addendum evidence by Mr. David Wilson titled “*PPC 28 Maitahi & Bayview – Technical Assessment – Water Sensitive Design Addendum*” (dated 24/06/2022).
- (c) Section 42a addendum evidence by Dr Paul Fisher titled “*PPC28 Maitahi Bayview – Technical Review Water Quality*” (dated 21 May 2022)
- (d) Evidence of Mr. Dali Suljic for Save the Maitai Inc – Stormwater, dated 27 June 2022.

### **Scope of Rebuttal Evidence**

- [3] I note that the Section 42a Planning Addendum evidence prepared by Ms Gina Sweetman agrees with the technical evidence prepared by Ms. Kate Purton, Mr. David Wilson, and Dr. Paul Fisher, and therefore the focus of my rebuttal evidence is on the Section 42a technical evidence.
- [4] Matters relating to the assessment of off-site effects of the development on flood hazard to adjacent and/or downstream properties are covered in the rebuttal evidence of Mr Damian Velluppillai.

- [5] Matters relating to the assessment of stormwater in terms of peak flow attenuation, infrastructure and water sensitive design principals (in part) are covered in the rebuttal evidence of Mr Maurice Mills.
- [6] The scope of my rebuttal evidence covers significant matters in contention arising from submissions or any matters of disagreement between experts.

### **Rebuttal to the Section 42a addendum reporting**

#### *Water Sensitive Design, Mr. David Wilson*

- [7] In his addendum memorandum under paragraphs 12, Mr. Wilson states that:

*“the wording for the requirements for retention of at least 5mm runoff depth has been taken from the E10. Stormwater management area – Flow 1 and Flow 2 of the Auckland Unitary Plan.”* and that *“There has been no work to establish if the Auckland criteria and approach are the appropriate on-lot hydrological mitigation for this site.”*

- [8] In my EIC and memorandum appended to SMP I have stated the intent to ‘mimic natural hydrology’ through managing stormwater volumes by retention to align with natural evapotranspiration and shallow infiltration rates. It is accepted that the quantification of how this will be achieved will require further work but it is suggested that based on works in other locations across New Zealand this is likely to require the retention of an initial 5 – 10 mm rainfall depth with consideration given to sequential rain days and how this appropriately represents natural frequent flow hydrology. This will be a focus of subsequent design where a combination of rainwater reuse and infiltration can be optimised to meet modelled predevelopment hydrology in frequent rainfall events.

- [9] In his addendum memorandum under paragraphs 17 -20, Mr. Wilson states that:

*“From a Water Sensitive Design perspective, there are limited positive effects to realigning the Lower Kākā stream”.*

- [10] It is noted that aligning the stream against the toe of the existing vegetated escarpment (true right side) will provide immediate shading and overhead vegetation. This will provide immediate ecological benefits in terms of temperature, reduced weed ingress and food source through terrestrial invertebrates. This is considered to represent a water sensitive design approach that considers the relic alignment of streams and opportunities to optimise ecological benefits in an urban context. Whilst these benefits could, in time, be realised in the existing modified alignment it is suggested that this would take a period of 10-15 years for establishment of tree canopies during which a lack of shading could result in increased water temperatures and aggressive weed growth. Therefore, whilst it is agreed that benefits from the realignment are not unique, they support an acceleration of benefits from existing established vegetation cover.
- [11] In his addendum memorandum under paragraphs 21 - 23, Mr. Wilson comments on stormwater detention devices located within the Kākā Stream and stormwater treatment devices located within the Open Space Zone.
- [12] Location of detention storage within the stream corridor provides opportunity to provide an integrated solution whereby streamflow and fish passage is supported under baseflow and small /moderate rainfall events with any detention only engaged in large rainfall events (defined by required attenuation events). This can then be engaged via temporary flood storage which inundates adjacent flood plains and riparian margins. As per evidence of Mr Mills it is noted that the alternative to provide detention in below ground storage is not supported. I raise additional concerns relating to embodied carbon of below ground pipes, unnecessary redundancy of below ground detention storage and increased lifecycle operating costs. It is therefore suggested that where ground contours support it, the inclusion of online detention storage can provide flood resilience in an integrated and efficient manner. In certain locations this could involve inundation which extends across constructed wetlands located within the riparian margins. Any concerns with design for fish passage and passing of 'non flood' flows can readily be allayed through design which must comply with relevant national and local guidance. It is also noted that inspection and maintenance

of unconstrained detention storage such as online storage areas is more readily supported than with distributed below ground devices.

[13] Detailed design at future resource consenting phases will investigate and optimise the opportunities to co-locate flood detention storage within constructed wetlands adjacent to Kākā Stream.

[14] In his addendum evidence under paragraph 24, Mr. Wilson comments on suitability of stormwater treatment devices within the Riparian Margin and suggests these:

*“should not be in the Riparian Margin as they will require ongoing inspection and maintenance. Based on discussions with the Council's Ecological expert these activities are not appropriate for the Riparian Margin”*

[15] Ecological considerations with the location of treatment devices is addressed by Mr Markham. It is further noted that the co-location of appropriately designed stormwater treatment devices is well suited to esplanade reserves adjacent to streams assuming appropriate levels of flood protection and provision for maintenance access. Whilst specifically focussed on water quality improvements, these devices can also be designed to support community connections with urban ecology, provide ancillary biodiversity and link with amenity assets such as shared pathways and landscape nodes. These benefits are considered to be well aligned with water sensitive design aspirations and are compatible to further restore the riparian margins to support a high quality linear green corridor.

*Water Quality, Dr. Paul Fisher*

[16] In his addendum memorandum under paragraph 8 Dr. Fisher considers that:

*“the applicant's advice on ecological and water sensitive design for improving the water quality and ecological outcomes has all been based on the premise that Kākā stream will be ‘realigned’”,*

and that

*“this approach has negated the assessment of developing the catchment around the existing stream corridor”*

[17] I refer to my paragraph 10 for comment on the benefits of the proposed stream realignment.

[18] In his addendum memorandum under paragraph 11 Dr. Fisher notes that:

*“the Water Sensitive Design (EV13) and Freshwater Ecology (EV9) applicant reports both refer to water quality monitoring data that has inherent sampling variability and does not strictly adhere to the respective standard environmental monitoring protocols for reporting”*

[19] It is agreed that the water quality monitoring undertaken to date is not sufficient to provide a statistically robust summary of existing water quality across a range of seasonal conditions. It is however noted that it appears to support the hypothesis that the previous agricultural landuse (with uncontrolled stock access) was contributing to degraded water quality. The approach to development will largely be independent of these results with a stated intention to provide best practice water quality/quantity management.

[20] I agree with the comments provided by Dr Fisher in paragraph 25 where he concludes that:

*“the existing proposal, utilising water sensitive design, will incorporate stormwater treatment for the Kakā catchment, consistent with providing an optimal level of protection”*

[21] In his addendum memorandum under paragraph 30 Dr. Fisher considers that:

*“the applicant has not provided any high-level details regarding the construction phase: how development will be staged at a scale to avoid significant sediment loads to reduce impacts on water sensitive design infrastructure, including stormwater treatment wetlands and downstream effects to recreation and ecological values”.*

- [22] It is noted that given the highly conceptual stage of design, staging or construction sequencing has not been developed. It is however noted that the protection of any built stormwater devices will be critical and that Erosion and Sediment Controls consummate with the fresh and coastal receiving environments shall be provided for and are likely to be a key point of scrutiny through the resource consent phase given the scale of development.

### **Rebuttal to the Evidence of Mr. Dali Suljic**

- [23] In his addendum memorandum under paragraph 5 Mr. Suljic considers that:

*“the assessments and the SMP supporting PPC28 have not adequately considered the effects of earthworks, susceptibility of existing streams and natural channels to erosion, or the sensitivity of the receiving environment to the changes in stormwater runoff quality and quantity from the proposed development”.*

- [24] It is considered that the SMP, supporting memorandums and provided earlier EIC provide sufficient evidence of the feasibility of progressing development with appropriate consideration for long term water quality, stream health enhancements and integration of water sensitive design within greenfield development. Whilst the level of design may not align with Mr Suljic’s expectations it is considered appropriate for a plan change phase of development given expectation of ongoing development of urban design and supporting infrastructure as development progresses to future consent stages. As noted during expert conferencing it is highlighted that the detailed design of future subdivisions will require detailed modelling and quantified performance metrics to demonstrate to consent authorities that development will exceed existing (or future) national and local standards such as NPS-FM.

- [25] In his addendum memorandum under paragraph 7 Mr. Suljic considers that:

*“PPC28 proposes development within a sensitive receiving environment and as such the level of detail supporting the plan change should reflect this”.*



- [26] Given the historical agricultural landuse and existing degraded condition it is considered that Kākā Stream is not an especially 'sensitive' receiving environment but rather as a freshwater stream and tributary of the Maitahi/Mahitahi River it warrants a high level of protection. It is considered that this can enable development which contributes to an enhancement from the current state and provides an exemplar of water sensitive design in the local Nelson context. It is considered that this is reflected in the PPC 28 supporting works which demonstrate the feasibility of developing the land in exceedance of requirements under the NPS-FM.
- [27] In his addendum memorandum under paragraphs 25 - 36 Mr. Suljic discusses general concepts related to water sensitive design and development. He references local and national design guidelines which I am familiar with and have contributed to in a technical capacity.
- [28] It is considered that the design development has appropriately reflected this approach including the identification of physical constraints (steep hillsides, existing vegetation and stream corridors), recognition of opportunities to integrate Kākā Stream into development, importance of site wide integrated stormwater treatment and opportunities for amenity and community connection. Progression of the design to support consenting will build on feasibility to demonstrate quantitatively how outcomes can be realistically and robustly achieved.
- [29] In his addendum memorandum under paragraphs 43 - 48 Mr. Suljic raises concerns relating to the ability to achieve retention of stormwater to match natural hydrology (water balance). He notes that this raises concerns with protection of Kākā Stream.
- [30] As discussed in my EIC and supporting reports the retention of stormwater shall be provided through a mix of on lot retention (rainwater reuse tanks and soakage (where appropriate)) and centralised retention through consolidated devices (such as raingardens with internal storage). It is my opinion that given the greenfield nature of the development the delivery of an integrated and holistic strategy which mimics the pre developed (and

ideally natural) hydrology will be technically feasible based on appropriately sized rainwater reuse tanks and residual soakage.

- [31] In his addendum memorandum under paragraph 58 Mr. Suljic notes that:

*“the SMP proposes a stormwater management approach that utilises at-source green infrastructure”*

and states that:

*“the implementation of these devices is closely linked to topography, particularly for the roadside applications”.*

Mr Suljic concludes that:

*“the SMP has failed to demonstrate how the proposed green infrastructure devices can be practically implemented through the resource consent stages”.*

- [32] As per my EIC and supporting reports the preference is for consolidated stormwater treatment devices (raingardens and wetlands) that can be constructed in suitably sized level land. Conceptual works undertaken in support of the SMP has estimated conservative spatial areas required for treatment which can readily be integrated into design as it develops.

- [33] In his addendum memorandum under paragraph 59 Mr. Suljic considers that:

*“there is no specific regard given to the downstream receiving environment in terms of the level of stormwater runoff quality treatment required to respond to the proposed changes in land use”*

- [34] In accordance with my EIC and Schedule X9 Principals the intent is to provide best practice stormwater management across the site. Whilst it is not considered that the Kākā Stream environment is not particularly sensitive, the aspiration is for the development to represent best practice to protect both the immediate environment and downstream Maitahi/Mahitahi River/Waimea ecosystems. This will be achieved through the management of water quality and quantity.

[35] In his addendum memorandum under paragraph 60 Mr. Suljic considers that:

*“the proposed SMP does not specifically recognise or consider the presence of several native freshwater species, or the community values of the receiving environment including ‘Dennes Hole’.”*

[36] The proposed approach to stormwater management is based on best practice treatment of all site generated stormwater with the explicit aim of protecting and enhancing Kākā Stream. As an existing freshwater stream this was recognised at the outset as needing both protection and enhancement for not only fish but also invertebrates, dependant birds and downstream connected ecosystems. Dennes Hole has for an extended period been subject to degraded water quality from agricultural landuse and will be improved through the removal of stock from stream and grazed land and the pre-treatment of stormwater throughout the development.

Dated 06 July 2022



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Stuart Farrant