

**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

STATEMENT OF REBUTTAL EVIDENCE OF MAURICE GRAEME MILLS

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Name, qualifications, experience, and code of contact

- [1] My full name is Maurice Graeme Mills. 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

- (a) I prepared a Statement of Evidence with respect to infrastructure (water supply, wastewater, and stormwater) as part of the PPC28 application. I have since been provided with and read the following documents:
- (b) Section 42a addendum report by Gina Sweetman titled “Section 42a Addendum Report of Gina Sweetman – Planning, Sweetman Planning Services, on Behalf of Nelson City Council’ (dated 29 June 2022).
- (c) Section 42a addendum evidence by Ms. Kate Purton titled “PPC28 Maitahi Bayview – Addendum K Purton Stormwater and Flood Risk” (dated 27 June 2022).
- (d) Section 42a addendum evidence by Mr. David Wilson titled “PPC 28 Maitahi & Bayview – Technical Assessment – Water Sensitive Design Addendum” (dated 24/06/2022).
- (e) Evidence of Mr. Dali Suljic for Save the Maitai Inc – Stormwater, dated 27 June 2022.

Scope of Rebuttal Evidence

- [2] I note that the Section 42a Planning Addendum Report prepared by Gina Sweetman agrees with the technical evidence prepared by Ms. Kate Purton and Mr. David Wilson, and therefore the focus of my rebuttal evidence is on the Section 42a technical evidence.

- [3] 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.
- [4] Matters relating to the assessment of water sensitive design principles are covered in the rebuttal evidence of Mr Stuart Farrant.
- [5] 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

Stormwater and Flood Risk, Ms. Kate Purton

- [6] In her addendum evidence under paragraph 7, Ms. Purton lists the level of information required at Plan Change Stage, as follows:
 - (a) *A multi-disciplinary approach to developing a concept design for stormwater and flood risk management, including spatially overlaying the relevant elements.*
 - (b) *Hydraulic modelling to demonstrate the performance of the concept design.*
- [7] The Stormwater Management Plan (SMP) was prepared using a multi-disciplinary approach which included inputs from Urban Design, Landscape, Ecology, Water Sensitive Design, and Flooding.
- [8] Appendix A of the SMP submitted with my evidence provided an overlay of the proposed attenuation devices for areas of high slope risk and overlays of proposed attenuation and treatment devices for the Structure Plan.
- [9] Hydraulic modelling of the Kākā Stream catchment and Walters Bluff/Brookland catchment have been undertaken, demonstrating that it is feasible for stormwater runoff to be attenuated to mitigate the effects of any additional volume or increased peak discharge resulting from the PPC28 area. Refer to Section 5.6 and Appendix B of the SMP.
- [10] In her addendum memorandum under paragraph 33, Ms. Purton concludes that: *Further work is required on the proposed PPC28 provisions to clearly set out the stormwater and flood risk management requirements for future development of the site,*

and how it shall be demonstrated that these have been met. For instance, these rules should cover: restrictions on building materials to limit contaminants; treatment of first flush runoff from carparks and roads; infiltration of 5 mm of runoff from new impervious areas (when located within a recharge zone); on-site rainwater reuse tanks; extended detention of 50% AEP 2- hour runoff, released slowly over 24 hours; and attenuation of 1% AEP post-development peak flows to 80% of pre-development peak flows, with performance demonstrated by hydraulic modelling. The provisions should also include rules regarding site-wide and individual development/subdivision Stormwater Management Plans.

- [11] Recommendations on restricting the use of inert building materials is addressed in Section 5.5.1 of the SMP.
- [12] Recommendations on management of the first flush of runoff from car parks, roads, hardstands and driveways within the Kākā Stream catchment is addressed in Section 5.5.2 of the SMP and paragraphs 24 – 35 of my evidence.
- [13] Restricting post development peak flows to 80% of pre-development peak flows is not a requirement of the Nelson Tasman Land Development Manual 2020 (NTLDM).

Water Sensitive Design, Mr. David Wilson

- [14] In his addendum evidence under paragraph 12, Mr. Wilson comments on the adopting of 5mm runoff depth from the E10. Stormwater management area – Flow 1 and Flow 2 of the Auckland Unitary Plan. It is acknowledged that the SMP may need to be updated in the future, subject to further investigations being completed.
- [15] In his addendum evidence under paragraph 16, Mr. Wilson lists what he would consider typical SMP principles:
 - (a) *Recognise the key constraints and opportunities on site and in the xxxxxx catchment*
 - (b) *Devise an integrated stormwater management approach to facilitate urban development*

- (c) *Develop a set of best practicable options for stormwater that can be incorporated into the development*
- (d) *Emphasise a water-sensitive design approach that:*
 - (i) *manages the impact of land use change from rural to urban*
 - (ii) *protects and enhances stream systems and natural hydrology*
 - (iii) *mitigates for hydrological changes and manages flooding effects*
- (e) *Minimise the generation and discharge of contaminants/ sediments into sensitive receiving environment of the xxxxxxxx*
- (f) *Protect key infrastructure, people and the environment from significant flooding events*

[16] It is my opinion that all these principles have been adopted in the SMP submitted with my evidence.

[17] In his addendum evidence under paragraphs 21 - 24, Mr. Wilson comments on stormwater detention devices located within the Kākā Stream and stormwater treatment devices located within the Open Space Zone.

- (a) Paragraph 22 – *“Locating detention within the stream corridor should be avoided if possible. Detention can, for example, be provided in oversized pipes or underground tanks placed within road corridors.”*
- (b) Paragraph 23 – *“Any detention structure located within a stream would have to be designed in accordance with the fish passage requirements of the National Environmental Standard for Freshwater.”*
- (c) Paragraph 24 – *“Stormwater treatment devices may be located within the Open Space Zone but 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.”*

[18] While the installation of underground storage devices such as oversized pipes and underground tanks is theoretically feasible, the volume of storage

required for the catchments adjacent to the Kākā Stream (typically 2,700 – 3,300m³) suggests these are not practically viable options. While it has been demonstrated in the SMP that it is feasible that stormwater detention can be located within the stream corridor, offline stormwater detention will also be investigated as part of the design process.

- [19] Discussion on the location of treatment devices with the riparian margin is covered in the rebuttal evidence of Mr Joshua Markham.

Rebuttal to the Evidence of Mr. Dali Suljic

- [20] In his evidence paragraph 23 (a), Mr. Suljic considers that the following information should have been provided:

- a. “Robust technical assessments to establish the existing hydrological regime and enable an understanding of the functioning of the natural system including soil infiltration and water retention capacities, presence of groundwater, streams and wetlands, and the relationship to the site’s ecology, geology, and topography.”*

- [21] The SMP was prepared using a multi-disciplinary approach which included inputs from Urban Design, Landscape, Ecology, Water Sensitive Design, and Flooding. I refer Mr. Suljic to the evidence of Mr. Mark Foley regarding geology and topography.

- [22] In his evidence under paragraph 23 (c), Mr. Suljic considers that the following information should have been provided:

- c. “Detailed assessments to establish the extent of actual or potential effects of the proposed development under PPC28 that are specific to the assessment of the existing hydrological regime and the sensitivity of the receiving environment including the effects of earthworks on the existing hydrology and the capacity to implement hydrology mitigation measures.”*

- [23] I refer Mr. Suljic to the evidence of Mr. Michael Parsonson.

- [24] In his evidence under paragraph 23 (d), Mr. Suljic considers that the following information should have been provided:

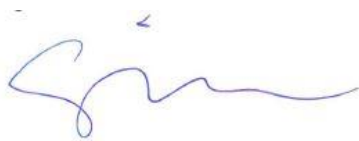
- (d) *“Establishing the extent of future developable areas and a corresponding stormwater management framework, giving effect to Te Mana o te Wai, that addresses all aspects of stormwater in the context of managing the recognised effects of the proposed development, including hydrology, stream erosion and water quality. This should be supported by:”*
 - (i) *“Specific stormwater management expectations and requirements for distinct catchments and areas.”*
 - (ii) *“Conceptual sizing and location of key centralised stormwater management devices and reserves.”*
 - (iii) *“Establishing and mapping of regenerative blue-green networks including riparian margins and esplanade corridors.”*

- [25] Specific stormwater management expectations as a minimum, have been based on the requirements of the Nelson Tasman Land Development Manual 2020 (NTLDM), with appropriate consideration also given to the objectives and policies within the Nelson Resource Management Plan (NRMP), and national best practice guidance documents which include Auckland Regional Councils GD2017/001 (GD01), Hamilton City Council HCC07 and NCC/TDC Bioretention and wetland practice note, 2019.
- [26] Recommendations on management of the first flush of runoff from car parks, roads, hardstands and driveways within the Kākā Stream catchment is addressed in Section 5.5.2 of the SMP and paragraphs 24 – 35 of my evidence.
- [27] In addition, and where feasible, the quality of stormwater discharged from the PPC28 area will exceed these standards, as part of ensuring the effects of urban development are appropriately managed and that the downstream impacts of freshwater values are maintained or enhanced.
- [28] Mr. Suljic comments in paragraph 43 of evidence on development on the steeper slopes of the Kākā Valley.
- [29] The Structure Plan does not show development on these steep slopes.

- [30] Mr. Suljic comments in paragraph 48 of his evidence that there is a high likelihood that the development under PPC28 will fail to mitigate the adverse effects of increased stormwater runoff volumes.
- [31] In my opinion, appropriate provision for stormwater retention and detention, as set out in the SMP, will likely protect the receiving environment from the potential adverse effects from the increased flows generated by the development by providing extended detention and managing the post development peak flows in accordance with the requirements of the NTLDM so that they shall not exceed pre-development peak flows for the 10% AEP (10 year ARI) and 1% AEP (100 year ARI) with allowance for climate change.
- [32] Mr. Suljic comments in paragraph 51 of his evidence that the SMP provisions do not demonstrate that the Kākā Stream can be protected from erosion resulting from development under PPC28.
- [33] In addition to retention and detention measures discussed elsewhere in my rebuttal evidence, the SMP discusses specific hydrological mitigation measures to be implemented, to provide extended detention to manage flows from smaller, more frequent events. This is also a requirement of the NTLDM, Section 5.4.11.
- [34] Mr. Suljic comments in paragraph 53 of his evidence that there is a high likelihood that development under PPC28 would adversely change the existing catchment hydrology.
- [35] Consideration of the geology and groundwater regime has been incorporated into the SMP. The Engineering construction of earthworks as specified by the NTLDM encourages fill placement design that does not require extensive fill underdrainage. The nature of the engineering materials available within the proposed plan change area is such that fill materials can be specified that enhance local areas with respect to re infiltration of groundwater. This will potentially improve groundwater retention and evens out discharge to downstream reaches.

- [36] Mr. Suljic comments in paragraph 57 of his evidence that the SMP does not broadly recognise the topography constraints and has failed to demonstrate that the actual and potential effects of earthworks on hydrology can be managed through the proposed regulatory and design requirements.
- [37] As mentioned elsewhere in my rebuttal evidence, the development is restricted to flat, gently inclined, and moderately inclined slopes. Steep slopes are largely removed from the areas proposed for residential land zoning. Hence, slopes have been considered as part of the geotechnical assessment which informs the SMP. Topography constraints have been considered in the areas proposed for residential zoning and are reflective of slope gradients as well as other constraints and are in accordance with established hillside development in Nelson.
- [38] Mr. Suljic comments in paragraph 59 of his evidence 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.
- [39] In addition to meeting the minimum requirements of the NTLDM, the SMP proposes first flush stormwater treatment from all public roads within the Kākā Stream Catchment, and where practical, treatment will also be provided for car parks, hardstand areas and driveways.
- [40] Mr. Suljic comments in paragraph 65 of his evidence that; *“overall, it is not clear how the proposed stormwater management provisions and requirements on water quality treatment were developed, and the inadequacies in these provisions as discussed above mean there is a high likelihood that the existing freshwater systems and their amenity values will not be protected and enhanced.”*
- [41] Paragraphs 5.1 – 5.4 of the SMP, clearly set out the principles and proposed approach to stormwater management within the PPC28 area.

Dated 06 July 2022

A handwritten signature in blue ink, appearing to be 'M. Mills', with a small blue mark above the first letter.

Maurice Mills